THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXI. SATURDAY, AUGUST 6, 1892. No. 6.

ORIGINAL ARTICLES.

INFLAMMATION IN THE RIGHT ILIAC FOSSA, ASSOCIATED WITH LESION OF THE CECUM, THE VERMIFORM APPENDIX AND ADJACENT TISSUES.[1]

BY JOHN B. DEAVER, M.D.,

PROFESSOR OF SURGERY IN THE PHILADELPHIA POLYCLINIC; ASSISTANT PROFESSOR OF APPLIED ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA.

IT was with no little hesitancy that I selected for the subject of my remarks "Inflammation in the Right Iliac Fossa, Associated with Lesion of the Cecum, the Vermiform Appendix and Adjacent Tissues," as I was conscious that the part of the subject coming especially under the head of appendicitis is one upon which much has been written. My apology, therefore, is that I hope to present it in a somewhat different manner than it is usually dealt with, and, to insist upon the importance of the surgeon being called in counsel earlier than has been the custom. So often have I been impressed with the responsibility of the position of the physician who is called to treat cases of this character and does not seek the advice of the surgeon until the eleventh hour, when, perchance the patient has developed a diffuse peritonitis, or is in a state of collapse, most commonly caused by the rupture of an abscess, that I feel warranted in offering this suggestion.

Inflammation in the right iliac fossa, associated with lesion of the cecum, the vermiform appendix and adjacent tissues, can be divided clinically into two classes, namely, intra-peritoneal and extra-peritoneal. The former includes the cases referred to in the text-books as those of appendicitis, typhlitis and peri-typhlitis. I propose the term intra-peritoneal inflammation to include all cases of inflammation in the right iliac fossa having their origin within the peritoneum and associated with lesion of the cecum or the appendix, for the following reasons: 1. I believe it impossible to differentiate between appendicitis, typhlitis and peri-typhlitis. 2. I believe the terms typhlitis and peri-typhlitis to be misleading, and so long as it is taught that they are distinct affections, independent of trouble with the appendix, will the physician be misled. As a result of this classification, there is delay from day to day, in the hope that the case is one either of typhlitis or peri-typhlitis, and that operation is not so urgently called for as were the case one of appendicitis. I consider it nothing more than a mere refinement to divide inflammation of the cecum, as is done, into inflammation of the gut proper and inflammation of its serous covering (peri-typhlitis). I cannot see the practical value of such a division, as both conditions require a common treatment, and further, I do not believe it possible to make the differentiation at the bedside.

It has been my fortune to have seen a large number of cases of inflammation in the right iliac fossa, as well as to have operated on many, and I think I have clearly demonstrated that the best classification of the three pathologic conditions, appendicitis, typhlitis and peri-typhlitis, is under the head of intra-peritoneal inflammation in the right iliac fossa. In the greater number of cases of inflammation in the right iliac fossa the vermiform appendix is the organ primarily attacked; yet there are cases, as has been demonstrated post-mortem, in which the cecum alone is the seat of the trouble. Again, I believe, as do most observers, that when post-mortem both the cecum and the appendix are found to have been the seat of inflammation the starting-point has been in the appendix. Granting, then, that there are three pathologic conditions included in intra-peritoneal inflammation in the right iliac fossa, and that it is only in exceptional cases that the diagnosis between typhlitis and peri-typhlitis can be made, is it not safer and more rational to dispose of all three conditions as one? The differentiation is to be compared with the attempt to recognize the different coverings of the strangulated hernia: while anatomically there are several coverings, these are practically indistinguishable. The differentiation between typhlitis and peri-typhlitis, I think, requires an astuteness greater than we are willing to concede even to the most expert.

Extra-peritoneal inflammation in the right iliac fossa includes the class of cases in which the tissues adjacent to the cecum and the appendix are involved and constitutes para-typhlitis. While I do believe that there are cases of extra-peritoneal inflammation (para-typhlitis) that originate independently of any trouble in the appendix, and involve simply the connective tissue adjacent to the cecum, I do not deny that the starting-point of such an in-

[1] Read at the Twelfth Annual Meeting of the Lehigh Valley Medical Association, held at Bethlehem, Pa., July 7, 1882.

flammation may not be in the appendix. The latter condition may arise when the appendix is an extra-peritoneal organ, as when it lies posteriorly to the cecum and the ascending colon. When the appendix is post-cecal, as well as post-colic, and is the seat of ulcerative inflammation, it is readily understood how, by extension by continuity of tissue, the inflammatory process may involve the connective tissue adjacent to the appendix, and thus occasion a so-called para-typhlitis. This anomalous position of the appendix, when the seat of perforative appendicitis, further accounts for extra-peritoneal collections of pus in the right iliac fossa due to appendicitis and not (in every instance) consequent solely upon inflammation of the connective tissue in the neighborhood of the cecum. It likewise explains why abscess, the result of an appendicitis, does not always point internally to the anterior superior spine of the ilium, but may from its position simulate peri-nephric or lumbar abscess. An intra-peritoneal inflammation starting as an appendicitis and forming a circumscribed swelling, shutting itself off from the general peritoneal cavity by the formation of adhesions, may go on to pus-formation and even rupture into the peri-cecal and peri-colic tissues.

With a knowledge that all inflammations in the right iliac fossa associated with lesion of the cecum, the vermiform appendix and the adjacent connective tissue are divisible into intra-peritoneal and extra-peritoneal, our first duty is to distinguish between them. This we will do under the following heads: 1. *History.* 2. *Symptoms.* 3. *Physical Examination.*

HISTORY.

Extra-peritoneal Inflammation.	*Intra-peritoneal Inflammation.*
Usually constipation.	Constipation the exception rather than the rule.
Very slow onset, particularly if not caused by injury inflicted from without.	Onset sudden.
	There may have been one or more attacks before. Likely to follow a very heavy meal, eaten in a hurry, or the ingestion of indigestible food.

SYMPTOMS.

Pain confined in great measure to the outer part of the iliac fossa in the line of the loin. Constitutional disturbance not at all pronounced early. Disposition, when standing, to incline to the right side, soon followed, if the trouble does not abate, by flexion of the thigh upon the abdomen. Numbness and pain in the right leg frequently complained of. When the inflammatory deposit is great enough to exert pressure upon the right iliac vein there will be edema of the right leg.

In most cases, pain at first referred to the umbilical and epigastric regions, but later to the right iliac fossa. Nausea early and very often vomiting, which becomes uncontrollable if the case does not yield to active treatment. Thirst, which may be extreme. Furred tongue. Bowels usually confined, but there may be a slight tendency to diarrhea. The temperature ranges from 101° to 103°, or higher, with a rapid pulse-rate. Here, too, there may be a disposition on the part of the patient to incline the body to the affected side, as well as to flex the limb upon the abdomen. Very often, frequency of urination.

PHYSICAL EXAMINATION.

Extra-peritoneal Inflammation.	*Intra-peritoneal Inflammation.*
Tenderness above the crest and externally to the anterior superior spine of the ilium and in the line of the loin.	General tenderness over the right iliac region is very marked.
	In the majority of cases I have not found the greatest amount of tenderness at any one point in the fossa, as has been described by McBurney. Yet, in a few cases, I have seen it most pronounced at the so-called McBurney point.[1]
Dulness followed by flatness, at first upon deep percussion, and later upon superficial percussion in the line of the crest of the ilium.	Superficial percussion in the very early part of the case yields negative information, while deep percussion will reveal dulness, and later flatness, as the case steadily advances.
If the case steadily progresses, a mass corresponding in position with the area of dulness will be detected.	Palpation detects very decided resistance offered by the abdominal muscles of the affected side.[2]
	In many cases an indurated mass is detected by palpation of the abdominal wall, which, in many instances, is circumscribed, while in others it becomes rapidly diffused, particularly in the direction of the linea alba and of the pelvis.
Digital examination through the rectum yields negative information. Vaginal examination may be of some value, and should at least be made.	Deep rectal, as well as vaginal, examination[3] I do not regard of much diagnostic importance, early in the case at least. In those cases in which the appendix holds its third position, I regard it of value.
If suppuration takes place, it is usually first manifested by edema of the abdominal walls overlying the mass. Fluctuation is more readily made out than in intra-peritoneal inflammation.	Suppuration is not so readily dectected in this as in the extra-peritoneal form, as fluctuation is more difficult to elicit. Yet I have seen it moderately well pronounced many times.
	If the mass can be felt through the rectum or the vagina it is well to palpate the abdominal walls at the same time, and in this way elicit fluctuation.
	Edema of the overlying abdominal walls I have not found present as often in the intra-peritoneal inflammation as in the extra-peritoneal. If associated with the presence of a mass in either variety of inflammation there are decided chills and sweats, it would be very evident that pus is present.

CASE I.—W. R., thirty-eight years old, seen in consultation, presented a swelling in the right iliac fossa, extending backward in the line of the loin; edema of overlying abdominal walls; a rather sharply defined mass. The thigh was flexed on the abdomen. The temperature had been fluctuating

[1] This point I regard as more useful in approximately locating the site of the base of the appendix than as a diagnostic sign. If the inflammation is most intense in the terminal portion of the appendix, as well as in the class of cases in which the appendix is anomalously located, of what value can this so-called point be? I consider it of no significance whatever in helping to arrive at a correct conclusion as to the nature of a given case.

[2] This I regard as an important sign to be considered in the diagnosis.

[3] When I speak of deep rectal examination, I mean introduction of the finger alone, and not the introduction of the hand, as has been suggested. The latter I consider a most deplorable measure.

for several days, and there had been chills and sweats. The history was one of slow onset, with pain in the right iliac fossa, extending to the loin.

A diagnosis of extra-peritoneal inflammation was made, and operation advised. An incision was made in the right semi-lunar line down to the transversalis fascia, which was opened, and the sub-peritoneal fat exposed, when, after a little dissection, carried backward in the direction of the loin, a large quantity of pus was evacuated. The cavity was washed out, drained, and packed with iodoform-gauze.

Palpation of the peritoneum, which was clearly exposed, over the site of the appendix, yielded negative information. Recovery was complete and uneventful.

CASE II.—R. B., twenty-two years old, was admitted to the German Hospital for acute abdominal trouble. The temperature was 102°; the pulse-rate 112. The woman had been sick for three days. There was abdominal pain, most intense in the region of the umbilicus; and diarrhea, followed by constipation. The greatest amount of pain was now referred to the right iliac fossa. Examination of the abdomen elicited tenderness, especially pronounced over the right iliac fossa, with the presence of a distinct mass a little above and to the inner side of the anterior superior spine of the ilium. Deep vaginal examination detected a painful mass. Rectal examination was not satisfactory. Operation was advised. An incision was made in the right semi-lunar line, exposing the peritoneum, which on palpation presented the presence of an unquestionable mass. The peritoneum was incised, an abscess-cavity containing the vermiform appendix opened, and the appendix removed. The cavity was washed out, a glass drainage-tube introduced, and the wound packed with iodoform-gauze. Either end of the incision was closed with two sutures. Some days later, this cavity still containing a small amount of pus, a counter-opening was made through the loin into the cavity, and thorough drainage established. Recovery soon followed.

CASE III.—M. H., nineteen years old, was seen in consultation. The woman gave a history of having been taken suddenly ill five days previously, with nausea, severe pain in the right iliac fossa, accompanied by constipation. A tumor rapidly developed in the right iliac fossa, which, within thirty-six hours, extended in the line of the linea alba and of the pelvis. At the time of my visit the patient was vomiting almost incessantly, the stomach being practically non-retentive. The abdominal walls were decidedly rigid over the right iliac fossa, with very slight edema, and a diffused mass presenting questionable fluctuation. Rectal and vaginal examination yielded negative results. A diagnosis of intra-peritoneal inflammation was made.

An incision was made in the right semi-lunar line down to the peritoneum, which bulged into the wound, and upon palpation presented a fluctuating mass. The peritoneum was opened, and found to be adherent to the great omentum, which was distributed over the most prominent part of the mass. The incision was carried carefully through the omentum. In attempting to examine the underlying mass with the finger a large abscess-cavity was ruptured, giving exit to a quantity of fecal-smelling pus. The cavity was washed out with warm distilled water, and further examination made with the finger, when the cavity was found to be shut off from the peritoneal cavity by a limiting wall. The appendix could be neither seen nor felt. The cavity was drained by glass and rubber, and packed with iodoform-gauze. Recovery was uninterrupted.

CASE IV.—H. J., thirty-two years old, after eating a large quantity of peanuts, was seized during the night with violent paroxysms of pain in the right iliac fossa. Medication was resorted to for a few days without producing any good effect. When I first saw him the abdomen was tympanitic, the walls of the right iliac fossa tense, but not pitting on pressure, and an indistinct mass was discovered. The family strongly objected to operation. On the following morning the patient being worse, with persistent vomiting, I was hastily summoned. A diagnosis of intra-peritoneal inflammation was made, and operation advised. An incision was made in the right semi-lunar line, down to the peritoneum, through which a small tumor could be distinctly seen. The peritoneum over-lying the tumor was incised. The mass was opened, and about one ounce of pus escaped. The abscess-cavity was washed out, when by touch it was found to contain the appendix. The appendix was ligated, and was found to be perforated, as well as containing a small piece of a peanut. The cavity was packed with iodoform-gauze. Recovery ensued.

CASE V.—A. M., twelve years old. History of pain in the umbilical region. A tumor was found in the right iliac fossa, extending back into the loin. Resistance was offered by the overlying abdominal muscles. The temperature ranged from 100° to 102.° The patient was seen twelve days after the onset of the trouble with the attending physician, Dr. Stephen R. Ketcham, who told me that, until within a few days at least, he regarded the case as one of appendicitis, of which it had presented all the symptoms. The pain was now referred to the right costo-iliac space, which, when compared with the the opposite side, was found to be bulging, with edema of the overlying integument. Examination further revealed an unquestionable collection in the loin-space. The patient was removed to the German Hospital, where an incision was made in the loin, and a large quantity of fecal-smelling pus evacuated. The cavity was washed out and packed. Two days later the appendix was cast off through the wound with a quantity of fecal matter. A fecal fistula resulted, but spontaneous recovery ultimately ensued. This was in all probability a case of inflammation of an anomalously-placed appendix, resulting in an extra-peritoneal collection of pus, simulating a peri-nephric abscess.

CASE VI.—Mr. S., eighteen years old, became suddenly ill, with pain in the right iliac fossa, radiating to the region of the umbilicus. A day later the pain was much more severe, with distention of the abdomen and nausea. The temperature ranged

between 101° and 102.5°. The pulse-rate increased correspondingly. The bowels were moved by Rochelle salts. A mass about the size of an orange was now to be felt in the right iliac fossa. The pain becoming much more severe, and the abdomen enlarging, I was asked to see the case. I found the patient considerably better, the pain much less, the abdomen smaller, the mass less apparent. The man had gotten out of bed, when his bowels were copiously moved; the dejecta, it was stated, contained milk. With this history, I believed an intra-peritoneal abscess of the right iliac fossa to have ruptured into the cecum.

Operation not advised. Recovery ensued.

The use of the exploring or the hypodermatic needle, to determine the presence of pus, I do not think wise or judicious, and I believe it to be capable of doing much harm. It will be inferred that it is difficult to say when a case of inflammation in the right iliac fossa, associated with a lesion of the cecum, vermiform appendix, or the adjacent tissue, demands operation. The decision will be governed by the local as well as the general condition of the patient, and the result obtained by well-directed medical means. If the recently accepted treatment by means of mild purgation with salines, or calomel if the stomach rebels against salines, and the very moderate use of opium if necessary, fails to render the patient comfortable, to allay vomiting, to prevent abdominal distention, to produce liquid evacuations, the temperature remaining high or tending to rise, and the local trouble becoming more pronounced, with increase of abdominal resistance, tenderness, and induration, I at once and unhesitatingly advise operation. Constant retching, increasing abdominal distention, and obstinate constipation, are three conditions that, when associated, warrant immediate interference, granting that the patient's general condition does not contra-indicate interference. There is, I think, already a sufficient number of fatal cases on record in which treatment by opium alone in gradually increasing doses has been adopted in preference to operation, to disabuse the minds of both physicians and surgeons of the fallacy of such a course. After refusing to operate on many cases brought into the hospital in approaching collapse, with a diagnosis of peritonitis consequent upon an obstruction of the bowels, with hugely distended belly, incessant retching, with a history of the bowels not having been moved for four or five days, and death following in from eight to twelve hours, the autopsy showing the abdominal cavity flooded with pus, the vermiform appendix perforated if not gangrenous, the coils of small intestines greatly distended and matted together with layers of fibrinous lymph, I cannot conscientiously form any other opinion than that the attending medical man did not believe in operative treatment, or deferred calling the surgeon until the golden opportunity was a thing of the past. Under circumstances like these, the argument, Why not operate, if the patient is sure to die any way? is often brought forward. In answer to this, all that I can say is that it often requires better judgment to decide when not to than when to operate. The conscientious surgeon should always be willing to take desperate chances if there is the slightest indication of benefit to his patient, but certainly not otherwise.

In cases in which the symptoms and the local conditions are relieved by the treatment I have suggested, surgical interference should certainly not be considered. I recently operated upon a case of extra-peritoneal inflammation, with suppuration, referred to me by my friend, Dr. Charles Styer. Fluctuation being most pronounced in the loin, I carried my incision through this part and evacuated a considerable quantity of fecal-smelling pus. As the case was originally believed to be one of inflammation of the appendix, I exposed the appendix by an incision in the right linea semilunaris, when both appendix and cecum were found to be perfectly normal. This case, as well as others upon which I have operated, demonstrates beyond doubt, to my mind at least, that we meet with cases of extra-peritoneal inflammation associated with the bowel, arising independently, and not caused by intra-peritoneal irritation. This being so, is it not unwise to argue that every case of inflammation in the right iliac fossa arising in connection with the bowel, and going on to pus-formation, should be subjected to laparotomy? I am, therefore, forced to believe that the operative technique, as I have described it, is the safer procedure in dealing with inflammation of the fossa when it is impossible to say whether it is intra-peritoneal or extra-peritoneal, as is so often the case.

The operative technique for the relief of inflammation in the right iliac fossa associated with lesion of the cecum, vermiform appendix and adjacent connective tissue consists in exposing, first, the transversalis fascia and the sub-peritoneal fat, through the right linea semilunaris by a vertical incision of from four to six inches in length, the middle of which should correspond with the point at which a line drawn from the anterior superior spine of the ilium to the umbilicus intersects the semilunar line. The transversalis fascia and the sub-peritoneal fat having been exposed, if the inflammation be of the extra-peritoneal variety, and if pus be present, the fluid is very readily evacuated, while, at the same time, if the surgeon prefer, a counter-opening can be made well back in the flank, through which a drainage-tube can be introduced and the cavity thus drained to the best pos-

sible advantage, or the operation may be terminated after the manner of Parker. If the inflammation be of the intra-peritoneal variety, the peritoneum is taken up between a pair of hemostatic forceps and incised, when, if an abscess exists, it is evacuated, and the appendix removed, as the case may be. The abscess having been evacuated and thoroughly washed out, the appendix is sought for, care being taken not to break through the limiting wall of the abscess-cavity, granting that it is shut off by such a wall from the general peritoneal cavity. If the appendix is not to be seen or located, I at once complete the operation by either introducing a glass and a rubber drainage-tube to the bottom of the cavity, around which I pack iodoform-gauze, or simply pack the cavity with gauze, not using any drainage-tube. In the cases not under my care after operation I prefer to use the drainage-tube, and have it irrigated twice daily with Thiersch's solution, which when thrown into the rubber drainage-tube will escape through the glass tube, and *vice versâ*. The case progressing favorably, the gauze need not be removed for two or three days. When suppuration has decidedly lessened, the tubes are removed, the cavity washed out and packed with gauze, and healing by granulation promoted.

In the class of cases in which the general peritoneal cavity is involved, I make further search for the appendix if it is not to be seen or felt at the bottom of the wound, keeping in mind its three relations. Most commonly the appendix lies behind the terminal part of the mesentery, pointing in the direction of the spleen. The second most common position of the appendix is directly behind the ascending colon; in the third it dips down into the pelvis. To ascertain if it occupies the first position, it is necessary to lift up the cecum and the terminal portion of the ileum, when the retro-mesenteric space will be exposed. When it occupies the second position, it becomes necessary to lift up the cecum and probably the commencement of the ascending colon as well; this may necessitate dividing the external layer of the ascending meso-colon, which is selected in preference to the internal layer, as the bloodvessels that supply this portion of the gut are in relation with the latter. When the appendix holds the third position, it is more readily exposed, and in the female it is not uncommon to find it attached to the right uterine appendage. The appendix, having been exposed, is ligated close to the cecum and severed on the distal side of the ligature. It has been suggested to invaginate the stump of the appendix into the cecum, and stitch over it the serous covering of the latter. This procedure I have never had occasion to adopt.

In the event of the appendix having been separated from the cecum by ulceration, leaving an orifice of communication with the latter, I close the opening with two or more Lembert's sutures, if the margin of the opening is not infiltrated to too great a degree to warrant the removal of the diseased portion of the bowel. When the cecum is thus perforated by the separation of the appendix, and its coats are very much diseased, I believe it better practice not to attempt to close the opening, but simply to thoroughly drain the wound. My experience has been that the majority of fecal fistulæ of this character close spontaneously. If they do not, subsequent operation can be resorted to.

In Case V of the series here reported, a fecal fistula resulted, through which the evacuations continued to pass for some days. It ultimately healed without operative interference. The point to be borne in mind in cases of this character is the establishment of free drainage, thus preventing the passage of fecal matter into the peritoneal cavity. The probabilities are that in this class of cases the peritoneal cavity has been shut off from the perforated bowel by inflammatory exudation, thus explaining why recovery so often takes place under such circumstances.

From what I have said regarding the operative technique, it will be inferred that I disapprove of meddlesome interference, by which I mean, making a prolonged search for the appendix when it is not readily found. I have seen patients practically disemboweled in an eager search for the appendix, and even then it was not discovered. We know that prolonged exposure of the bowels is attended by profound shock, and is to be avoided if possible. The success of abdominal operations in general depends upon their being done with as much rapidity as possible, granting, of course, that every care is taken in each step of the operation. In work of this character I also disapprove of the introduction of the entire hand into the abdominal cavity, believing that, in the majority of cases at least, two fingers, the index and the middle, with, in some instances, the assistance of one or two fingers of the opposite hand, are sufficient to accomplish all necessary manipulation. We have all seen a sufficient number of cases of laparotomy for the removal of diseased uterine appendages, particularly cases of pyosalpinx, to know that the skillful surgeon accomplishes the removal with but two fingers; this holds good in cases of the character included in the subject of this paper.

The after-treatment consists in the administration of occasional doses of salines or calomel, depending upon the retentive power of the stomach, in order to have the bowels freely moved two or three times daily, and, if the patient suffers much pain, a small amount of opium. I do not

believe in the exclusive use of salines, both before and after operation, in cases in which pain has been an important factor, but I likewise give anodynes, being governed by the amount of suffering. On the other hand I very much disapprove of giving enough opium to mask the symptoms of the disease, as I regret to say is so often done. (Paralytic distention of the bowel, a most unfortunate complication in cases of advancing intra-peritoneal inflammation, is certainly favored by the administration of opium, when given to the extent of producing its physiologic effect.) Opium has held very much the same relation to abdominal troubles in the past as has blood-letting in the acute sthenic inflammatory affections. Both are still useful when properly employed. While I appreciate that opium not administered very cautiously in these cases is harmful, yet I do believe that restlessness and sleeplessness will be more hurtful to the patient than a judicious dose or two of the drug. On the other hand, active purgation by means of drastic cathartics, such as podophyllin and others of its class, I equally disapprove of, as I feel that the excessive peristalsis that is certainly brought about by these agents aggravates the local condition. I have said nothing about suturing the abdominal wound. This I do not approve of, with the exception of one or two sutures at the angles of the wound. In other words, I rely upon healing by granulation. I have found that ventral hernia is not any more likely to follow when the wound is treated in this manner than when it is sutured.

In my earlier operations for the removal of the appendix, in which I closed the wound with sutures, I made a counter-opening in the loin and introduced through drainage. By treating the wound by the open method this is not necessary.

SOME SUCCESSFUL METHODS OF TREATING ALOPECIA AND ALOPECIA AREATA.[1]

BY A. H. OHMANN-DUMESNIL,
PROFESSOR OF DERMATOLOGY AND SYPHILOLOGY IN THE ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.

ALOPECIA and alopecia areata are diseases of the scalp that have always interested dermatologists. Their study has of late years received a new impetus by reason of careful investigations to which they have been subjected. The questions that have been mostly considered are the etiology and the treatment of these conditions. These are to a great degree independent, and for that reason it may not be regarded as inopportune to devote a few words to the consideration of the etiology before entering upon the subject-matter proper of this paper.

[1] Read in the Section of Dermatology and Syphilography of the American Medical Association, at Detroit, June, 1892.

In regard to the etiology, there exists considerable difference of opinion, and the advocates of the different theories advanced may be roughly divided into three groups, viz.: Those that contend that all cases of alopecia are of parasitic origin; those that contend that the origin of these troubles is of a neurotic character; and those that are inclined to favor the one or the other, according to the particular indications presented in each individual case. The upholders of the parasitic theory have apparently made out a strong case, but their arguments possess certain inherent defects of such a nature as to considerably invalidate their claims. The evidence is, in a large number of instances, far from convincing, and we have added to this the suppression of the negative cases, or of such experiments as do not tend to support the view advanced. The fact that strong antiseptics, locally applied, tend to promote a growth of hair is no proof that the result is due to the destruction of parasites or of pathogenic microörganisms. The further fact that these applications must be of considerable strength seems to invalidate the position still more; for it can be justly argued that the growth is due, not to the parasiticidal properties of the remedy, but rather to its stimulating qualities. Again, we have had exhibited to us cultivations of organisms obtained from such cases. Unfortunately for the cause advocated, these cultivations have but too often proved to consist simply of saprophytes, and could be obtained from organisms found on perfectly healthy scalps. I do not intend to deal exhaustively with these defects in the matter of proving the opinion advanced, but I merely desire to point out some possible sources of error to which investigators have been blinded by their enthusiasm.

Those that contend that alopecia and alopecia areata have a constant neurotic basis have a certain number of objections to contend with that they have not yet successfully overcome. They have very plainly demonstrated that in a certain number of instances the parasites are not the cause. They have also proved experimentally that lesions of certain nerves are followed by alopecia; but in some cases all of the neurotic phenomena discoverable have been treated with no beneficial results, even when aided by external stimulating measures. No results could be obtained until strong parasiticides were employed, and, while claiming merely stimulating properties for these agents, the obvious conclusion could not but force itself upon an impartial observer that the disease was, in fact, of parasitic origin. I do not desire to dilate further on this point, but will pass on to that class of observers whose conclusions appear to me to be not only more rational but correct and in consonance with clinical and pathologic observation, besides being confirmed

by the therapeutic results obtained. I refer to those whose contention it is that alopecia and alopecia areata may be due to either parasitic or to nervous influences, or to both combined. Those that persisted in one plan of treatment have been mortified by observing that failure followed their best efforts. Certain objective symptoms will serve to differentiate alopecia of neurotic and of parasitic origin.

In referring to alopecia in this paper I do not include the senile form, nor that in which the follicles of the hair have been destroyed, atrophied, or lost beyond redemption, but rather to pre-senile alopecia, defluvium capillorum, and alopecia areata. In the last-named affection we find the neurotic and parasitic types rather plainly differentiated by their respective histories and objective characteristics. In the parasitic form a history of infection may or may not be obtained. The disease may be traced to the barber's brush, infection from caps, hats, etc., worn by other individuals suffering from the same trouble, or there may be nothing definite in this respect. More or less marked itching will be present. The history of the attack will show that the falling out of the hair was gradual and peripheral. On inspection the involved area does not present a smooth surface. It is roughened to a certain degree, and the hairs at the border are lacking in luster and are easily broken upon attempts at extraction. Those portions of the scalp most often scratched are involved, and include the temporal and occipital regions, with occasionally the vertex. In many cases auto-inoculation can be clearly made out, and the entire evolution of the trouble traced upon the scalp of the individual. Scrapings from an affected area, if carefully rubbed into the skin of a dog, will produce an analogous condition, thus verifying in a satisfactory manner, the positive character of the cause of the alopecia. It must always be remembered, however, that these conditions apply to cases that have not been tampered with.

In the neurotic variety of alopecia areata, which, in my experience, occurs more frequently than the parasitic, we may or may not have a history of neuralgia, traumatism, or nervous or mental shock. The subjective sensations, if any exist, are not sufficiently well marked to attract much attention. The history is generally that the onset has been sudden, one or several areas becoming suddenly denuded of hair. These may be roundish or oval, or of irregular contour. The sizes of these areas vary considerably, and while progressive to a certain extent, there is a stationary period and an effort at spontaneous recovery. Objectively, the denuded spots have a white, almost glistening appearance, the comparison to ivory being a most apt one. A peculiarity present in this disease is that it is not limited to the scalp, but may attack, as it often does, the eyebrows, the axillæ, the breast, and the pudenda. The few symptoms enumerated are sufficiently well marked to distinguish the conditions from those of parasitic alopecia. We are, however, sometimes called upon to treat cases of alopecia areata in which both a parasitic and a neurotic cause are at work. In these the mixed effect may frequently be observed quite readily; while in the other case the problem presents such complications as to require fine discriminative powers, as well as close observation and examination.

It is hardly necessary to allude to any considerable degree to the other forms of alopecia that I have mentioned. The same general conditions and appearances exist, *mutatis mutandis*, as in alopecia areata. Concomitant phenomena are always found in connection with each individual case, of such a nature as to lead to a tolerably accurate conclusion in regard to the etiology. The cause being recognized, the rational method to pursue readily suggests itself, and the therapeutic succcess will wholly depend upon a proper selection of the remedies, and the method of their application.

I shall now consider some of the successful methods that I have employed in the treatment of some cases of alopecia and alopecia areata. I shall speak of methods, without entering into a detailed recital of cases. I only propose speaking of alopecia areata and of pre-senile alopecia, as furnishing by far the greatest number of cases of falling out of the hair that I have had occason to treat. The cases of pre-senile alopecia that I have treated, exclusive of such as were of syphilitic origin, occurred in males, and the majority of these were light blondes. In all cases, the hair was fine and silky and the scalp rather pale. In some, seborrhea existed, and the amount of secretion varied from very small quantities to quite a considerable quantity. In all, there was a history of more or less itching and of a gradual loss of hair, chiefly at the angles of the forehead and at the vertex. On combing the hair, it could be seen that this loss was considerable, although a considerable portion of what remained consisted of bed-hairs, so that the actual was by no means equal to the apparent loss. All were individuals otherwise in apparent health, whose functions in general seemed to be in perfect condition, with the possible exception of one. The nervous system lacked that stability and repose which should exist in the normal individual and which is so essential to proper assimilation. While this condition was not so apparent in all, those that did not exhibit the grosser phenomena of nervous disturbances exhibited psychic phenomena plainly indicative of nervous instability. Irritability upon slight provocation, anxiety concerning trivial affairs, depression of spirits out of proportion to the exciting cause, and similar pertur-

bations showed themselves as evidence of the neurotic condition present in the individual. A prominent feature was the hopelessness of the patient as to the ultimate result in the treatment of his case.

It will be readily seen that such cases are not very promising, yet a little moral suasion has quite an effect in improving the condition, and success is not the impossibility it might at first appear to be. The general treatment that I have adopted has been various in different cases, but has been directed to the amelioration of the condition of the nervous system. In some cases I have ordered the following twice daily in pill or in capsule:

℞.—Strychninæ sulphat. . . gr. $\frac{1}{60}$.
Ferri redacti . . . gr. j.
Quininæ bisulphat. . . gr. j.

Or, if starvation of the nerves seemed to be present, compound syrup of the hypophosphites was ordered in dram-doses four times daily, with a milligram (gr. $\frac{1}{62}$) of strychnine sulphate with each dose. In some cases, I have found it advantageous to supplement this treatment with pilocarpine hydrochlorate, taken at bedtime, gr. $\frac{1}{8}$ or gr. $\frac{1}{6}$ in powder. The effect of this internal medication was not a matter of coincidence, for, by its alternate withdrawal and resumption, most notable differences could be observed. These differences were so marked as to attract the attention of the patients and lead them to the conclusion that the internal medication was most beneficial in the improvement of the local condition. Such results occurred not only in one case but in several, and, although failure might follow the same course in some future cases, the success that has been attained is sufficiently encouraging to justify a continuance of the method until a better one can be suggested that will stand as rigid a test.

Alopecia areata occasionally presents difficulties of such a nature as to almost make us despair of any successful issue. I have been extremely fortunate in securing good results, and can only attribute them to the energetic means that have been used. Before entering into a consideration of the treatment, I desire to premise that I have always been careful to distinguish between the parasitic and the neurotic varieties of the affection. Having done this, the treatment was adapted to the condition present, and, while one method might fail, the general principle was always kept in mind in the application of the treatment.

In the parasitic form of alopecia areata I have used two parasiticidal mixtures; one, the weaker, for application to the entire scalp, to prevent new infection and a further spread of the trouble; the other, the stronger, for application directly to the implicated areas, for the purpose of destroying the parasite, and thus bringing the disease to an end. Both preparations were ordered to be applied twice daily, and, as all the cases I observed occurred in males, I had the hair clipped close to the scalp, thus facilitating thorough application of the remedy. For the weaker application I first used a 1:750 solution of mercuric chloride; afterwards a 3 per cent. solution of creolin. Both acted well, and the only advantage of the latter is the smaller danger of intoxication. This wash is to be applied to the entire hairy scalp, the affected areas being attended to after the first operation has been concluded. For the affected areas I ordered the application of sapo viridis for about five minutes, then gentle scrubbing, followed by:

℞.—Hydrarg. chloridi corros. . gr. j.
Lanolini . . . . ℥j.
M. Tere bene.
Sig.—Apply twice daily in small quantity.

In a comparatively short time a strong, healthy growth of hair could be observed. It is not always necessary to make this application twice daily. The frequency can be easily determined by the observer. Not infrequently one application a day, or every other day, will, in a short time, be all that is necessary. I have had no occasion to change the composition of this application, as in the few cases in which I employed it it proved satisfactory.

In alopecia areata of neurotic origin, which, in my experience, occurs much more frequently, I have given internal treatment in some instances and not in others. After trying various internal remedies, with more or less success, I have finally adopted the same preparations as those I have spoken of in the treatment of pre-senile alopecia. They have seemed to serve the best purpose and gave the best final results. I have observed that this internal treatment is of positive and undoubted benefit. Discontinuance of the remedy is followed by inferior results, and the effects of resumption of the treatment become very quickly apparent. In some cases, however, general treatment appears to be entirely unnecessary, but I have found these to be very few in number. They appear to be those in which a general shock had been experienced as a result of traumatism, and the nervous equilibrium was regained in a comparatively short period of time. Even in these, if no form of treatment has been employed for a considerable period of time after the injury, internal treatment is found of benefit. Yet cases of the last class must of a necessity be very infrequent. In those experimental cases in which nerves have been excised and the operation was followed by alopecia areata, the regeneration of the hair occurred spontaneously, and local as well as general treatment appeared unnecessary, but such cases would not serve as a criterion.

In the local treatment of alopecia areata the methods that I have found successful are essentially of the same character, although they differ materially in application. I do not claim any originality for either, as one is rather old and the other was suggested some little time since. Both are essentially irritant in nature, but efficient so far as my experience enables me to judge. The first is the suggestion of a French author, and consists in applying cantharidal collodion to the affected area. After vesication has been established, a dressing of some bland ointment is applied. As is well known, cantharidal collodion varies much in composition. In some instances it acts very promptly, while in others its action is quite slow. Again, its effect in the same individual may be comparatively superficial or quite deep, depending upon the proportion of cantharides present and the activity of the fly used in its composition. These circumstances necessarily act as factors in controlling the frequency of application of the remedy. In some cases I applied the cantharidal preparation twice a week, and in others it could be used but once in the same time. The reaction was more or less prompt, and, in some cases, I have had the unfortunate experience of seeing no effect of a distinct character, beyond some mild superficial irritation. However, by obtaining a good article, I have been enabled to obtain excellent results in a comparatively short time. While the effects produced were of the best, the various inconveniences attending the use of cantharidal collodion made the method anything but a pleasant one to the patient. The method is not easy of management. It causes matting of the hair; the application does not look well; it is very difficult to remove, and is inconvenient to handle. Added to this, the disagreeable necessity of continuously applying an ointment further increases the aversion of patients to the entire local curative procedure. I have often experienced much difficulty in persuading patients to continue the treatment, and it was only the good results obtained that led them to submit to it, in the hope of a speedy recovery and a proportionately short submission to the entire process. This difficulty was particularly marked in females.

When a new method was announced, obviating many of these inconveniences, and for which superiority of results was claimed, I immediatety adopted it, and desire here to express my complete satisfaction with the results attained by its use. I allude to the application of pure carbolic acid as advocated by L. Duncan Bulkley. He advocates the application of pure carbolic acid to the affected areas once every two weeks. The extent of surface to be thus treated must not exceed two square inches. He furthermore states that two, or at the most three, applications will suffice to effect a complete return of the hair. It may be Bulkley's experience to have had tractable cases, or I may have been unfortunate to have had only stubborn ones. This much, however, is certain: As soon as the method was announced it struck me as a particularly good one to use. I had a patient to whom it was applied as directed, but I had no success. This led me to modify the treatment, as follows: Instead of making an application once every fortnight I made it twice a week, and instead of limiting it to two inches I applied it to the entire surface involved—about ten square inches. Moreover, I was not at all satisfied with the ordinary 95 per cent. carbolic acid that I could obtain. It did not seem to be sufficiently strong. I secured some pure English carbolic acid, and by this means obtained more rapid and marked effects. With this product it is unnecessary to rub forcibly into the skin, and the result obtained appears to me to be much more rapid. It is true that my experience thus far has been limited to but a few cases, but they have proved so satisfactory that I shall continue until something better is offered. The method of applying the agent consists in freely swabbing the affected area with it, no matter how much of the scalp is involved. Those portions to which the acid is applied turn milky-white in a few moments, and if any are not thus affected they are touched again. This is all that is necessary. If any parts that turn white show marked inflammatory reaction, they are passed over at the next sitting. Generally, however, there is at most but a slight amount of desquamation.

Such treatment, while rather painful, is efficacious. I have also been in the habit of employing it in presenile alopecia in a modified manner. Instead of applying the carbolic acid liberally I have done so sparingly and at intervals of one and two weeks. The impulse given to the growth of hair by this procedure was quite noticeable.

That the methods that I have described are infalliable I certainly do not wish to claim, but that they are sufficiently rational to induce a trial I hope has been shown in the foregoing paper. They have been successfully employed in quite a number of cases.

CLINICAL MEMORANDA.

GONORRHEA OF THE VESICULÆ SEMINALES.

BY C. S. HOFFMAN, M.D.,
OF KEYSER, W. VA.

FROM a case that I have had under observation for the last eighteen months I have felt satisfied that there is a disease of the seminal vesicles which has not yet received the degree of attention that it should, and an article published in THE MEDICAL NEWS of May 7th, by Dr. F. B. Robinson, of Chicago, has led me to publish the following case:

In September, 1890, I was called to see Mr. L. A., fifty years old, married, and with whom I was well acquainted. He had always been very stout and hearty. He had never had any disease of his genito-urinary apparatus. I found the man suffering with a severe attack of gonorrhea, with epididymitis and orchitis of the left testicle. The gonorrhea was of about two weeks' standing; the orchitis and epididymitis of about three days' standing. The constitutional symptoms were such as would naturally accompany this combination of diseases. There was pouring from the urethra a copious muco-purulent discharge. No microscopic examination of the pus was made, but there could be no question from the history of the case, the symptoms, and discharge, that the disease was anything but a virulent case of neglected gonorrhea.

The gonorrhea yielded to treatment very slowly, from eight to ten weeks elapsing before the discharge had finally ceased. The inflammation of the testicle and epididymis subsided in from seven to ten days, although the man at times yet complains of pain in the testicle. After the acuteness of the attack had somewhat subsided, another source of annoyance developed in the form of a heavy, aching pain located deeply in the perineum. The pain was described as a sore, heavy, aching feeling, especially aggravated by standing for any length of time. It was also increased when the rectum became full of feces. The patient could hardly sleep at night until toward morning, when he would get somewhat easier. He could not sit flat down on a chair, owing to the aggravation of the pain by the pressure. The pain would be very annoying for one, two, or three weeks, and then there would sometimes be an intermission of a few days of less suffering, but never entire relief. For the first week or two after this last trouble developed, micturition *may* have been somewhat more frequent; on this my notes are deficient; but after this date the urine was not passed oftener than natural.

Supposing, from the symptoms, that inflammation of the prostate gland had developed, I employed appropriate treatment for some time without any improvement. On making a careful examination with my finger in the rectum, I found the prostate gland perfectly normal in size and not painful to pressure; but just back of it I could, on each side of the base of the bladder, clearly distinguish two bodies, longer than wide, which corresponded in location with the seminal vesicles, and which were exquisitely sensitive to touch. With a sound in the bladder and my finger in the rectum, I could positively locate them. Moving the sound in other directions in the bladder and pressing against it with my finger in the rectum would occasion no suffering, even when I would press the prostate gland between the two; but as soon as I would catch the seminal vesicles between the sound and my fingers, the patient would give indications of intense pain. Notwithstanding all that I could do in the way of treatment, the man made but very little improvement. He was, however, able to keep at work as a carpenter, though with much suffering, and he would occasionally have to stop for a day or two and lie down. In the spring of 1891, I advised him to consult a celebrated professor of surgery in one of our best medical schools for examination and treatment. He returned, saying that the professor made three examinations, and told him the disease was an inflammation of the base of the bladder, and for the cure of it prescribed salol and oleoresin of cubebs in capsules three times a day.

From this treatment the man derived no benefit, although he gave it a thorough trial. I have made repeated examinations with my finger and sound as described, and have always found the prostate gland of normal size and not painful; while reaching further back and pressing on the seminal vesicles, the pain was very acute, and especially so on the right side. I could never detect any fluctuation. To touch, the vesicles appeared swollen and harder than it appeared to me they should be in health. At present, this man is not entirely well, but for the past four or five months he has been gradually improving, and now rarely complains of his disease unless his work requires him to stand much for several days. That this disease was not a disease of the bladder is evident by the absence of trouble in micturition, which was neither frequent nor painful; nor has there been tenderness on pressing the bladder above the pubes, or with the sound in the bladder, except when counter-pressure was made over the vesiculæ seminales.

The prostate gland could not have been the seat of the trouble, else it would have been either enlarged or painful on pressure.

That the seminal vesicles were the seat of the disease is evident from the location, from the sensation and the pain elicited on pressure, and that the inflammation in them was caused by the gonorrhea seems clear from the history of the case. Dr. Robinson says it follows urethritis and generally exists with epididymitis. In this case it followed the urethritis, but did not develop until the epididymitis began to improve.

I find no mention made of any disease of the seminal vesicles in four of the five standard text-books on surgery in my library. Wyeth's *Surgery*, second edition, only mentions "that the inflammatory process may extend to the seminal ducts." In Bumstead & Taylor's work on *Venereal Diseases*, fifth edition, a short article is given to "Gonorrheal Inflammation of the Vesiculæ Seminales," in which the authors rely chiefly upon the statements of others for a description of the disease. In the course of this article it is said: "Inflammation of the vesiculæ seminales can rarely be diagnosticated with absolute certainty during life;" while I feel from the history of this case, as I have here related it, that with care it *is* possible to arrive at a correct diagnosis.

From a careful study of this case I have been impressed with the conviction, and especially since reading the article of Dr. Robinson, that gonorrhea of the vesiculæ seminales is probably of more frequent occurrence than it is recognized to be. The affection is probably often diagnosticated and treated as a disease of the prostate gland or base of the bladder.

A LABOR COMPLICATED BY CONGENITAL HYDROCEPHALUS.

BY OLIVER HOPKINSON, JR., M.D.,
VISITING PHYSICIAN TO THE LYING-IN CHARITY AND NURSE SCHOOL OF PHILADELPHIA.

BY permission of Dr. Thomas Hunter, in consultation with whom I saw the patient, I report the history of a labor complicated by intra-uterine hydrocephalus. The

case is especially interesting on account of the rarity of the complication (occurring, according to the statistics of Madame La Chapelle, fifteen times in forty-three thousand five hundred and forty-five deliveries), of the dangers to both mother and child always involved in these cases, and of the peculiar manner of the delivery of the head. I wish to add here that it was not until after the expulsion of the head that a true diagnosis was made.

We supposed from the large size and perfect form of the child's body that the difficulty was due to a correspondingly large head, with excessive ossification, increased by its position (the occiput was in the left iliac fossa; the chin dipped in the pelvis, with the face in relation with the right sacro-iliac synchondrosis).

There was nothing unusual discovered by palpation except the large size of the head. Both Dr. Hunter and myself can testify to the truth of the following statement of Playfair: "The diagnosis of intra-uterine hydrocephalus is by no means so easy as the description in obstetric works would lead us to believe."

Mrs. X., thirty years old, a quartipara, had a good family history. Her first husband, by whom she had three healthy children, died five years ago of pulmonary tuberculosis. Two years later, she married her second husband, the father of the child under consideration. Her previous confinements had been easy and natural, except the first, which was instrumental; all were vertex presentations.

Mrs. X. enjoyed good health until the beginning of this pregnancy, when she began to lose flesh and strength, with almost constant cough, nausea, and vomiting, and in the latter part with dyspnea that caused much distress—symptoms with which she had not been troubled in former pregnancies. She stated that the nausea, vomiting, and dyspnea were due to the position of the head, which she could feel "below the right breast-bone," and which "sunk in and out" whenever she coughed. About five months ago, Dr. Hunter, being consulted, detected evidences of slight trouble at the apex of the right lung.

The first sign of approaching labor was the rupture of the membranes at 10 P.M. The woman felt no pains until three hours afterward, when she had two or three rather severe ones, by which the breech was expelled. Then the pains left her. Dr. Hunter arrived at 2.30 A.M., one hour and a half after the expulsion of the breech, and found the fetus dead, the body born to the umbilicus, the back anteriorly, the head and arms in the cavity of the uterus, with the shoulders in close proximity to the vulva. With great difficulty he succeeded in bringing down both arms. After making several unsuccessful attempts to deliver by the usual methods he advised a consultation. The application of forceps was impossible from the position of the shoulders. I saw the patient at 5 A.M. Repeated attempts to move the head having failed, we decided to detruncate and apply the forceps before resorting to craniotomy. The neck was severed with a scalpel, and pieces of bone removed as far toward the base of the brain as possible, in order that the soft parts of the mother should not be injured.

The severing of the neck was followed by an escape of fluid (several ounces or more), which we mistook for the liquor amnii—an excusable error, as we did not see from where the water came, the neck being drawn up in the vagina by the great tension. I then tried to apply Tarnier's axis-traction forceps in order to rotate the head to a transverse position—it being still oblique—but failed.

Whilst the craniotomy instruments were being procured the patient had about an hour's rest, with good effect; for during that time there were several good pains—the first since the birth of the breech—which caused a favorable change in the uterus. Preparations were now completed for craniotomy. Dr. R. O. Kevin administered the ether. I found the uterus smaller and harder, the chin and mouth lower in the pelvis, but the occiput was still resting upon the ilium, with the neck high up behind the symphysis, the suboccipito-frontal diameter in correspondence with the right oblique pelvis. This change induced us to make one further effort with the forceps, which was easily adjusted to the sides of the head, and, by traction combined with compression (such a degree of force and compression being used as were considered justifiable and safe), the head was brought down, till the chin (still posterior) touched the pelvic floor.

Meeting with resistance, the instruments were removed, it being decided to leave the termination of the case to Nature, or, if that failed, to resort to craniotomy, which would now be comparatively a safer and easier operation, for both the pelvis and vagina were capacious. Happily, the pains increased in force and frequency, and with constant supra-pubic pressure the chin began to rotate anteriorly, sweep over the perineum, and glide under the symphysis—the mouth and nose at the vulva.

There being now a delay, notwithstanding several good pains, grasping the chin with the placenta forceps, I made traction directly upward during the following pain, when the forehead, occiput, and neck were born successively. The neck underwent a complete revolution. Probably ten minutes elapsed between the removal of the forceps and the birth of the head, which occurred at 7.30 A.M., six and a half hours after the birth of the breech.

The cause of the engagement of the face seems to be that, after the severing of the neck and the escape of serum, which the pains, with supra-pubic pressure, hastened, the suboccipito-frontal, biparietal, and bitemporal diameters, the ones chiefly concerned, were lessened by the collapse of both parietal bones.

Dr. Hunter informs me that the convalescence was unattended by any abnormal pelvic symptoms, but that the pulmonary complication has rapidly and decidedly advanced.

The etiology of intra-uterine hydrocephalus is obscure. I can find no cause in this case, unless it be the tuberculous condition of the mother.

MEDICAL PROGRESS.

Twelve-pound Fibroma of a Labium Majus.—At a meeting of the Medical Society of the State of Washington, McKone reported the case of a woman, thirty-nine years old, in the fifth month of pregnancy, who presented a large tumor of the left labium majus that had been

present from the ninth year of age. The mass had slowly increased in size; but only within a year had it occasioned any pain. It was as large as a man's head, and was attached by a short pedicle. The posterior aspect of the tumor was discolored and suppurating; two glands in the adjacent groin were enlarged and tender; there were pain and vomiting; the temperature had risen; and the pulse was accelerated. It was decided to remove the growth, and the woman acquiesced in the proposition. A rubber ligature was placed around the base of the tumor and another around the pedicle as close to the body as possible, and a careful dissection made of the intervening pedicle. The tumor was then severed from its connections. The patient made an uninterrupted recovery, and at term was delivered of an eleven-and-a-half-pound baby. On microscopic examination the tumor proved to be a fibroma.

Psoriasis.—DUBOIS-HAFENITH (*La Policlinique*, 1892, No. 6, p. 81) thus summarizes his views upon the subject of psoriasis: Psoriasis is a distinct affection, a morbid entity. The designations lingual psoriasis and syphilitic psoriasis are inappropriate and tend to lead to confusion. The etiology and pathogenesis of psoriasis are still obscure—that is, there is yet no causal treatment. Psoriasis is incurable, in the sense that there is no method capable of preventing recurrence. Arsenic is not a specific for psoriasis; neither is potassium iodide. The greatest reliance is to be placed upon the local treatment; general indications are, however, not to be ignored. The best remedy is chrysophanic acid; next in value come pyrogallic acid, oil of cade, naphthol, and white precipitate. In a general way the choice of the remedy and of the method will depend upon the social position of the patient, and the seat and extent of the disease. The individual tolerance of the skin is also to be considered. A certain number of cases of psoriasis resist all methods of treatment.

Oil of Anise as an Imbedding Medium for Making Frozen Sections.—To overcome some of the difficulties attendant upon the ordinary use of the freezing microtome, KUHNE (*Centralbl. f. Bakteriol. u. Parasitenk.*, 1892, xii, 1, p. 28) recommends the employment of oil of anise as an imbedding medium. Thin sections of hardened tissue, freed of their alcohol, are placed in a sealed flask containing oil of anise and permitted to remain for from twelve to twenty-four hours. They will then freeze readily, and delicate sections can be made. These are taken from the knife and placed in a dish containing oil of anise. Thence they are transferred to absolute alcohol, and are ready to be stained.

Peritonitis Due to Gonococci.—WERTHHEIM (*Centralbl. f. Gynäkol.*, No. 20) has reported the case of a woman, twenty-four years old, who for three years had a vaginal discharge, with pain in the hypogastrium. A right-sided salpingitis and a recent perimetritis were found. Ordinary treatment not availing, celiotomy was resorted to and the diseased appendages removed. In the pus contained in Douglas's cul-de-sac large numbers of intracellular gonococci were found. The right tube was evidently the source of the inflammation.—*Wiener medizin. Presse*, 1892, No. 25, p. 1018.

THERAPEUTIC NOTES.

Galvanism in Gynecology.—As the outcome of an experience of four years, RUTHERFORD (*Practitioner*, July, 1892, p. 32) has arrived at the conclusion that in the treatment of diseases of the female pelvic organs, the utility of the employment of galvanism, except in cases of fibroids, has been overrated, and that the results are not sufficiently satisfactory to command confidence. In uterine fibromata, this method of treatment is satisfactory in a few carefully selected cases only; as when hemorrhage is the chief or only symptom and in rapidly growing interstitial fibroids. The galvanic current merely acts as a caustic, destroying or diminishing the vascular areas that surround and constitute the source of nutriment for the fibroids. The primary polar action that abstracts acids and bases at the anode and kathode is too slight to be of any real benefit. The interpolar action is still an hypothesis.

Traumatic Tetanus Cured by the Antitoxine Isolated by Tizzoni and Cattani.—TARUFFI (*Riforma Medica*, No. 90) has reported the case of a peasant, seventy-four years old, who, ten days after receiving a lacerated and crushed wound of the right little finger while loading wood, presented manifestations of tetanus. For two days the symptoms increased. Then 0.25 of antitoxine that had been obtained by Professor Tizzoni from the blood-serum of an immunified dog was injected subcutaneously, and again twice on the following day and the next succeeding day, and once a day later—six injections in all being given.

The patient began to improve after the first injection, and on the eleventh day was entirely well. Virulent tetanus bacilli were found in the amputated finger.—*Wiener medizin. Presse*, No. 23, p. 937.

Treatment of Chorea.—JUMON maintains that the treatment of chorea should be governed by certain well-defined indications. In ordinary chorea, antipyrin and arsenic yield the best results. In chorea of rheumatic origin or associated with rheumatic manifestations, antipyrin is still indicated; with it sodium salicylate may be conjoined; sulphur baths may prove useful. If an hysterical element exist, the bromides may be employed. In chorea of cardiac origin, depressing remedies are to be avoided; potassium or calcium iodide is indicated. In most cases of chorea, gymnastic exercises and reconstructives may be advantageously employed.—*Journal de Médecine de Paris*, 1892, No. 28, p. 335.

Agathin, a New Antineuralgic.—ROSENBAUM (*Deutsche medizin. Zeitung*, No. 50) has successfully employed agathin in the treatment of neuralgia and rheumatism. Agathin is a body chemically related to salicyl and methylphenylhydrazon, and appears in tasteless and odorless leaves, insoluble in water, soluble in alcohol and ether.—*Wiener medizin. Presse*, No. 27, 1892, p. 1100.

Creasote for Whooping-cough. — Creasote, in doses of from half a minim upwards, three or four times a day, recommended in the treatment of whooping-cough. The cough diminishes, vomiting is infrequent, and the duration of the attack is abbreviated.—*Lyon Médical*, No. 29.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, Including Postage in North America.

PER ANNUM, IN ADVANCE . . . . . $4.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, AUGUST 6, 1892.

TIMELY OPERATION FOR APPENDICITIS.

THE question as to the proper time for surgical intervention in cases of inflammation of the cecum, the appendix and the surrounding tissues is one of the most important in practical medicine. Within the last five years much has been written upon the subject. It has been often discussed and still remains unsettled. In America, however, the general tendency of opinion is, we think, more and more in favor of early resort to operative treatment, and less and less to tolerate procrastinating expectancy.

Among those to whom the greatest credit is due for what amounts to a revolution in professional opinion are THOMAS G. MORTON, of Philadelphia, and CHARLES MCBURNEY, of New York. Other surgeons are also worthy of distinguished mention; but recent papers by the two operators named have reawakened a sense of our obligations to them.

MCBURNEY[1] lays great stress upon the importance of what, following Jacobi, he terms "timely" rather than "early" operation. He says: "I am surprised to see in the printed report of the *Proceedings of the Philadelphia County Medical Society*, at a meeting held in September last, that so representative a man as DR. PEPPER said that 'If every case of appendicitis were operated upon, the mortality would be tenfold what it now is.' The mortality is at present over twenty per cent. in cases treated by the expectant plan, so it is very evident that DR. PEPPER'S view of the possibilities of surgery is a very black one. But it is hardly worth while to follow his line of argument, for it seems to be based on the assumption that surgeons wish to operate upon every case of appendicitis. I have never read nor heard that any surgeon has expressed such a wish. My own experience, and that of many others, has been that operation for acute appendicitis, done at the right time and before the disease had progressed too far, is nearly invariably successful. Out of some fifty such cases I have seen only one die. . . . . As regards the diagnosis of the conditions which should lead to operation, I must differ entirely with DR. PEPPER and others who think highly of the method of examining the appendix through the rectum. In the early stages of appendicitis this method has no value whatever. Of course, those who are accustomed to allow abscesses to reach a large size will in time find a bulging tumor low down in the pelvis. We had better devote our attention to learning the signs of suppurative appendicitis before the abscess has threatened the rectum."

TO MORTON must be given the credit for having first deliberately sought out and removed an ulcerated appendix,[1] and for having, by his paper before the Philadelphia County Medical Society,[2] first clearly established the principles of surgical treatment of pericecal inflammation. Thus Philadelphia may claim the greater share of the credit for what may justly be called one of the most important and most radical advances of modern surgery. "MORTON'S operation," as it deserves to be called, is a different thing from the procedures formerly in vogue, when the abdomen was simply opened by a "Willard Parker" incision, to drain an evident abscess.

MORTON[3] divides cases of inflammation of the appendix into three groups. The first group is that of cases of simple irritation or inflammation of the appendix, a condition difficult of recognition during

[1] Cases of Appendicitis, Illustrating Different Forms of the Disease." Medical Record, April 16, 1892, p. 421.

[1] Case of Dr. Frank Woodbury reported in the Proceedings of the Philadelphia County Med. Soc., vol. viii, 1888, p. 101.

[2] Proceedings of the Philadelphia County Medical Society, vol. viii, 1888, p. 267.

[3] "On Appendicitis and Peri-cecal Inflammation, with Notes of Cases Illustrating Unusual Difficulties in Diagnosis." Journal of the American Medical Association, July 25, 1891.

a first attack, but which is likely to recur, when the diagnosis becomes strongly probable.

The second group is that of cases of inflammation with ulceration or perforation, in which a protective capsule is formed, so that, unless the walls surrounding the abscess-cavity should yield, peritonitis does not take place.

The third group is that of cases in which ulceration and perforation take place before sufficient lymph-protection has been established. Such cases are early associated with symptoms of unusual depression, and often of profound collapse.

Any case of mild appendicitis belonging to the first group of cases may pass to the second group, and in no case of the third group that MORTON has seen did careful inquiry fail to reveal the fact of a previous attack of appendicitis.

Rarely has a discussion before a medical society been productive of more good than that historical discussion before the Philadelphia County Medical Society on December 14, 1887, for from that discussion may justly be dated the modern advance in the treatment of appendicitis. As was stated, at a later date, by T. S. K. MORTON,[1] "Differential diagnosis of inflammatory affections in the region of the cecum, which is usually impossible prior to surgical interference, is neither necessary nor important, as operative procedure up to the point of establishing a diagnosis is identical for all affections of the cecal region; and the ratio of appendicular to cecal inflammatory affections is probably 100 : 1."

The surgeon last quoted is undoubtedly correct in his unqualified condemnation of needle exploration. "The procedure is inherently dangerous and will furnish no indication that cannot otherwise be obtained." This was demonstrated not long ago at an operation in which the relations of the parts and the situation of the abscess were such that not alone would the exploring needle have failed to reveal the presence of pus, but it would have perforated the gut.

Equally correct is the dictum that operation should be undertaken "not later than the third day of the disease, if the patient up to that time has failed to markedly improve" under skilful medical treatment. "Further than this, we should invariably operate as soon as the presence of pus is assured; when peritonitis is developing or spreading; when signs of sudden rupture of an abscess into the peritoneal cavity appear; and when septicemia from septic absorption is taking place. In children operation must often be performed earlier than in adults, as with them the malady is more speedy in development, more fatal in tendency, and shows a greater proclivity to involve the general peritoneum."

There can be no doubt that an overwhelming majority of cases of appendicitis recover without surgical treatment; according to MCBURNEY, nearly eighty per cent. Nevertheless, it is of the utmost importance that in the treatment of the remaining twenty per cent. a proper time for operation should not be allowed to go by, and thus patients be liable to perish, notwithstanding the untimely surgical intervention.

It is a question requiring the exercise of much judgment, and one in which no man is justified in taking alone the responsibility for delay. KEEN[1] strongly urges physicians to promptly call their surgical colleagues in consultation. PEPPER[2] with equal emphasis insists that the possibilities of medicine must not be forgotten by the surgeon. Both are right. Physician and surgeon both should see the case at the earliest possible moment. The surgeon should call the physician to his aid in order that no therapeutic or diagnostic method, possibly unknown to him, should be omitted in the examination of the case, or in treatment, with the hope of averting operation; and the physician should summon the surgeon in order that the latter should have full knowledge of all the circumstances of the case before taking the knife in hand.

Every case of appendicitis, no matter how mild it may apparently be, involves the possibility of the patient's death. Every operation involves the possibility of unknown and serious complications and of a fatal issue, and no professional pride of opinion, no unworthy motive whatsoever, should prevent that early consultation which alone will insure against both the alternative dangers: on the one hand, that of undue haste in operation; and on the other hand, that of undue procrastination and temporizing after operation has become necessary.

[1] "The Operative Treatment of Appendicitis." Proceedings of the Philadelphia County Medical Society, vol. xii, 1892, p. 262.

[1] Proc. Phila. Co. Med. Soc., vol. xii, p. 288. [2] Ibid, p. 287.

THE SIXTIETH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

IN another part of THE NEWS we present abstracts of the several addresses delivered in the

various sections of the Sixtieth Annual Meeting of the British Medical Association, held at Nottingham, July 26, 27, 28, 29. Some of the papers are noteworthy, and afford an index of the progress that is being made in the various departments of medicine. The relations between the two continents are so close that little transpires in one that does not early receive critical scrutiny in the other.

The Address in Medicine by DR. CUMING is a learned discourse, dealing in a masterly way with numerous important questions.

In the Address in Bacteriology DR. WOODHEAD ably expounds some of the most recent problems in the new science, together with the practical fruits of their solution.

The comparative observations of DR. RANSOM upon plants, in their application to the process of inflammation, are both ingenious and interesting.

The address of MR. CROFT in the Section of Surgery is a reflex of the work of his section, and deals briefly with some topics of absorbing interest.

DR. BEVAN LEWIS in the Section of Psychology makes a practical and thoughtful contribution, indicating a number of innovations that have been introduced in the West Riding Asylum at Wakefield.

In the Section of Pathology MR. VICTOR HORSLEY made a few terse, pointed introductory remarks, defining the almost ignored distinction between pathology and morbid anatomy.

In the Section of Diseases of Children, DR. MARSHALL made a strong plea for special instruction in this department of medicine.

In the Section of Pharmacology and Therapeutics DR. BROOKHOUSE reports seven cases of pulmonary tuberculosis, in which intra-tracheal injections of menthol were practised with satisfactory therapeutic results.

Without being over-sanguine, the future in both preventive and curative medicine is exceedingly assuring.

THE GROSS MONUMENT FUND.

A SUBSCRIPTION was at one time made for the foundation of a Chair of Pathological Anatomy, in memory of S. D. GROSS. We believe that something like $7000 was subscribed, but that the amount not being sufficient for the purpose, the project fell through. Would it not be well to consolidate this fund with the Gross Monument Fund of the American Surgical Association? This would insure a suitable memorial to PROFESSOR GROSS.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-eighth Annual Meeting, held at New London, Conn., July 20 and 21, 1892.

FIRST DAY—JULY 20TH.

THE Society was called to order by the Vice-President, DR. GEORGE C. HARLAN, of Philadelphia.

The first paper was one by DR. CHARLES A. OLIVER, of Philadelphia, entitled "History of a Case of Gunpowder Injuries to both Corneæ, Irides and Lenses, with Subsequent Restoration of Vision to almost Full Acuity."

A man, eighteen years old, received the powder-contents of a blank cartridge squarely in the face at a distance of three feet. There were several penetrating wounds of the corneæ, and powder was deposited in both irides and lenses. When seen several hours later, the loose particles of gunpowder were removed from the corneæ, conjunctivæ and sclerotics. The left cornea presented a peripheral wound, with a corresponding tear in the iris, through which a powder-grain could be seen adhering to the lens. Another wound extended almost through the cornea. The fundus was apparently normal. The right eye presented a penetrating wound of the cornea, with injury to the iris. The lens was swollen and rapidly becoming opaque. Four days later, secondary glaucoma developed. Eserine and cold compresses were then employed, and on the following day an iridectomy was performed. The wound healed promptly; atropine was resorted to on account of slight tenderness in the ciliary region. The left eye improved continuously. When the patient was discharged, two months after the accident, there was good perception of light in both eyes. In the left eye there was considerable unabsorbed lens-matter. The tension of the right eye was normal; most of the lens-matter seemed to have been absorbed. The lower half of the pupil was covered by a thin opaque sheet of capsular débris. Two weeks later, a broad round hole was made in the lower half of the capsule, securing, with proper correction, vision of $\frac{5}{7}$. After free double discission of the left lens, vision was restored to $\frac{5}{15}$. A year later, the eyes were perfectly quiet, and the patient pursued his ordinary occupation.

DR. SAMUEL THEOBALD, of Baltimore, read a paper entitled "Removal of a Fragment of Steel from the Vitreous Chamber by Means of the Electro-Magnet, with Preservation of Nearly Normal Vision." A small piece of steel had passed through the cornea and iris near the periphery, but had fortunately missed the lens. On the eleventh day, an attempt was made to extract the foreign body, which had excited a high degree of inflammation. The clouding of the vitreous humor prevented its location with the ophthalmoscope. A longitudinal incision, about 4 mm. long, was made through the sclerotic and deeper coats, between the inferior and external recti muscles and back of the ciliary body, through which the magnet-point, sterilized by boiling water, was introduced into the vitreous chamber. After several unsuccessful attempts, the bit of steel was withdrawn, adhering to the magnet-point. There was considerable hemorrhage, but no loss of vitreous. Subsequently a lotion of opium and

boric acid was applied and atropine instilled. Recovery was rapid and uninterrupted. Three months later, the eye was almost normal in appearance. The pupil was not quite circular. The vitreous was clear. Vision was 20/XXV +.

DR. F. BULLER, of Montreal, Canada, read a paper on "Foreign Body in the Retina." Six days after being struck in the left eye with a piece of metal, the patient, a man twenty years old, presented a penetrating wound of the cornea, with perforation of the iris and zonula, without opacity of the lens. A short distance below the papilla a piece of metal lay in the retina. Rest and instillation of a two-grain solution of atropine were ordered. A zone of opacity around the foreign body gradually increased in size. Twenty-six days after the injury, although the eye felt well and vision was 6/XII, there were pronounced evidences of neuro-retinitis. The piece of metal was still quite distinct. For a considerable distance around the foreign body there was marked atrophy of the choroidal pigment. Fourteen months later, the eye was still giving no trouble. Vision was $\frac{6}{9}\frac{+}{7}$. There was diffused hyalitis, with fine opacities in the vitreous; the optic nerve was red and swollen; the foreign body, however, could no longer be seen. Its former seat was marked by a small patch of pigment.

DR. CHARLES STEDMAN BULL, of New York, reported a "Case of Traumatic Irido-Choroiditis from Contusion of the Eyeball, ending in the Development of Intra-ocular Glioma." The patient, a girl three years old, had been struck on the left eye by the bowl of a large spoon. There was no rupture of the eyeball. The child at once complained that she could not see. Ten days later, the eye was sightless; there was a central infiltration of the cornea, with loss of epithelium. The iris was dilated, discolored and immovable. The vitreous was hazy, and there was a yellowish reflex from the nasal portion of the fundus, due to an exudation. There was no pain or sensitiveness on pressure. One week later, numerous hemorrhages took place into the retina and vitreous, and the tension was increased. All external signs of irritation had subsided. Three months later, a detachment of the retina occurred, involving nearly two-thirds of the fundus. The yellowish reflex still remained and vessels were seen running over it. The tension still remained plus. Six weeks later, the sclera in the ciliary regions became thinned. Enucleation was urged, but refused. Four months later, the child was much worse. She was anemic and emaciated. There was a large ciliary and equatorial staphyloma; the anterior chamber was obliterated. The lens was opaque and crowded against the cornea, and the tension was much increased. The parents now, nearly a year after the injury, consented to an enucleation. The child at first improved much, but two months later she complained of headache and nausea, and the pre-auricular and submaxillary glands were found enlarged. Three weeks later, a growth was discovered in the orbit, and the upper cervical glands became enlarged. The symptoms grew steadily worse, and three months after the enucleation the right eye became involved, a small yellowish deposit being found in the inferior temporal quadrant. The left orbit became filled with the growth; the glands on the left side became enormously enlarged; the child became gradually stupid, then comatose, and died sixteen months after the blow on the left eye.

No autopsy could be obtained. A microscopic examination of the left eye showed gliomatous masses developed in a matrix of exudative tissue.

DR. G. E. DE SCHWEINITZ, of Philadelphia, read a paper on "Hyaline Bodies (Drusen) in the Nerve Head." He reported the case of a man forty-five years old, who had received an injury of the head some twenty years previously. The optic nerves were atrophic. The globular masses were arranged circularly slightly within the apparent margin of the head of the nerve. They were surmounted by shining particles that glistened like cholesterin crystals. After death, compound hyaline bodies or "drusen" were found in the head of the nerve, within the tissue of the papilla, anterior to the lamina cribrosa. The optic nerves were atrophic. The coats of the arterioles in the optic nerve below the lamina, and of the central artery in the neighborhood of the "drusen," were thickened. The optic nerve and the brain presented no abnormality.

DR. CHARLES A. OLIVER, of Philadelphia, reported Two Cases of Symmetrically-placed Opacities of the Cornea, occurring in mother and son. In both cases the condition had existed for a long time, and no cause could be ascertained.

DR. S. O. RICHEY, of Washington, read a paper entitled "The Prime Etiological Factor of Glaucoma is Constitutional." He traced a correspondence between an attack of podagra and one of acute inflammatory glaucoma. Many manifestations of rheumatic gout are associated with chronic glaucoma, viz.: enlarged or distorted joints, a peculiar, senile pallor, or muddiness of the skin, periods of mental depression, and other symptoms attributable only to changes in the nervous system. It was contended that chronic glaucoma is associated with neurotic manifestations that are to be ascribed to the absorption of toxic substances from the intestinal tract.

In the treatment of chronic glaucoma, the quantity and quality of food are to be carefully regulated in accordance with the physical needs; prompt excretion of improper intestinal products is to be favored; and uric acid solvents and strychnine and galvanism are to be employed.

DR. EDWARD JACKSON, Philadelphia, read a paper on "The Full Correction of Myopia." Of twenty-nine cases of myopia in which full correction was prescribed, in but three was there any notable increase in the degree of myopia, and these were hard students. The contra-indications are presbyopia and an exceptional inability to use strongly concave lenses for near work; lowered acuteness of vision, so that the perfect retinal images are not appreciated; habituation to large blurred images, which made sharper images unpleasant, as in old myopes; and divergent squint established to secure more perfect monocular vision.

DR. GEORGE C. HARLAN, Philadelphia, read a paper entitled "Constant Correction of High Myopia." He reported twelve cases in which full and constant correction of myopia of all degrees, varying from four to sixteen diopters, had been worn for periods of from five to seventeen years. The patients were from twelve to twenty-five years old. In some, the fundus was normal; in

some, there were moderate myopic crescents; and in others there were extensive choroidal changes. There was, however, not the slightest loss in the acuteness of vision in any case. In eight, the myopia was stationary; in three, there was a slight increase in myopia from 0.50 to 1.50 D.; in one only was there a considerable increase, 2.50 D., after constant correction for nine years. Excessive convergence without accommodation is the most important factor in progressive myopia. The restoration, so far as practicable, of the normal relation of these two functions is the most valuable therapeutic measure.

The degree of comfortable accommodation that exists, or can be acquired by practice with gradually increasing lenses, should be the chief guide in selecting the glasses to be used. The convergence will usually adapt itself when the accommodation is given its normal range; or if it does not, it may be made to conform by prisms or tenotomy. Complete correction of the optical defect, with full restoration of the normal relation between accommodation and convergence, is the ideal condition, and can usually be attained in young subjects with fair acuteness of vision and full accommodative power.

When full correction is impracticable it is better to sacrifice something in distant vision by the employment constantly of the strongest glasses with which comfortable reading is possible than to use two pairs of glasses.

DR. SWAN M. BURNETT, of Washington, read a paper on the "General Form of the Human Cornea, and its Relation to Refraction of the Eye and Visual Acuteness." Measurements made with Javal's ophthalmometer demonstrate that the cornea gradually diminishes in curvature from the visual axis toward the periphery. This diminution is much greater to the nasal side. The difference in the vertical meridian is less than that to the nasal side, but on the average is greater than that to the temporal side. The practical inference is that the place of election in an iridectomy is the temporal side of the cornea. Dr. Burnett reaffirmed his belief that the ophthalmometer is one of the best means for making out astigmatism, but it cannot be relied upon to the exclusion of other methods, for it gives no indication of the degree of lenticular astigmatism, the existence of which the instrument itself has been mainly instrumental in demonstrating.

DR. SWAN M. BURNETT, of Washington, further read a paper entitled "Some Incidental Phenomena of the Shadow Test." He maintained that the shadow test is an approximately reliable means of testing refraction. In a number of cases in which the findings of skiascopy and those of test-glasses did not coincide a play of shadows was observed within the illuminated area that moves across the pupillary space, similar to what is observed in conical cornea.

The phenomenon is ascribed to some interference with the regular refraction of the light in its outward passage from the fundus, and must be found in the corneal substance (not sufficient to produce a discoverable opacity), or in the surface or substance of the lens. In all cases in which the internal shadows were at all pronounced the visual acuteness was below the normal. In some instances, the shadow-tests give reverse movements with minus glasses, when plus glasses were required to improve vision, the examination being made under a mydriatic.

DR. HERMAN KNAPP, of New York, read a paper entitled "The Law of Symmetry of Our Eyes, as Manifested in the Direction of their Meridians: its Rules and its Exceptions." He considered the symmetry of one eye as a whole as compared with its fellow with regard to the median line of the body. In 1000 successive cases of astigmatism it was found that the meridian of strongest refraction (shortest radius of curvature) was symmetrically placed in 84 per cent.

The dominating direction is the vertical (60 per cent.); next comes the horizontal (11 per cent.); then the diagonal with 4.3 per cent.

Dr. Knapp proposed a classification of the varieties of astigmatism based on the direction of the strongest meridian, viz., vertical, horizontal, and intermediate or oblique astigmatism. A deflection of 45° may be called diagonal. The oblique variety has to be subdivided into nasal oblique (or simply nasal), and temporal oblique (or simply temporal).

DR. GEORGE C. HARLAN, of Philadelphia, read a paper, giving "Statistics of Direction of the Principal Meridians of the Eye," the results obtained being similar to those presented by Dr. Knapp.

DR. CHARLES A. OLIVER, of Philadelphia, read a paper on "The Clinical Value of Repeated Careful Correction of Manifest Refractive Error in Plastic Iritis," as a result of a study of forty cases.

In nearly every case of iritis, especially if plastic, there is a period, even after full pupillary dilatation has been seemingly artificially obtained, during which, owing to the persistence of inflammatory changes in the uveal tract, graduated instillations of mydriatics should be employed; the duration and gravity of this period is most accurately measured and determined by the systematic and repeated estimation of the varying manifest errors of refraction.

Whilst, during this stage, there are at times curious changes of corneal curvature, the bulk of the ametropic change is due to the perversion of the lens's action from what is termed "spastic accommodation," as the result of ciliary irritation and inflammation.

In nearly every case of iritis the duration of this stage can be promptly shortened by the judicious and ready use of some quick and powerful intra-ocular muscular paralyzant.

In some few such cases, however, during the acme of the attacks, especially if the case be pronounced in type and stubborn in character, the higher grades of refractive error seem to obstinately persist with but little variation, and to defy local and general measures.

In some cases of incipient iritis in which clonic spasm of the ciliary muscle is present, or pupillary contraction persists, local muscle paralysis is often quickly obtainable by a prompt and more energetic employment of powerful and appropriate local and general remedies.

DR. OREN D. POMEROY, of New York, read a paper entitled "Some Tenotomies of Recti Muscles for Insufficiency," reporting four cures in which the operation had been performed. Most of the cases of insufficiency had been relieved by correcting the ametropia.

In dividing the tendon, in some instances, an aperture

has been made in the center and a small hook passed in, dividing successively each half. This is a difficult procedure, and is not necessary. Ordinarily the conjunctiva is dissected as little as possible, and the tendon is divided at its insertion; the patient is then tested by prisms, and if the result is not satisfactory more dissecting is done. It is difficult to determine by inspection whether or not all of the tendon has been divided. A little over-effect is usually desired, and if considerable over-effect is obtained a suture will correct it.

DR. H. F. HANSELL, of Philadelphia, read a paper on "Prominent Symptoms of Hyperphoria," based on a study of thirteen cases. In two cases, the symptoms were purely local. Photophobia of moderate degree was present in five cases. Pain in the eyeball, constant, or induced by reading, was prominent in all cases.

Six cases suffered with vertigo. In two cases, marked dyspepsia was present. In four cases, the most prominent symptoms were nervousness, irritability of temper, and at times mental confusion.

SECOND DAY—JULY 21ST.

DR. CHARLES STEDMAN BULL, of New York, presented "A Contribution to the Subject of Intra-cranial Lesions, with Defects in the Visual Fields; Five Cases, with Autopsies." The first case was that of a woman, fifty years old, who had received a severe mental shock, followed by convulsious and profound nervous prostration. Then followed severe neuralgia, recurring every three weeks and lasting for more than a year. The first ocular symptom was night-blindness in one eye, with progressive amblyopia. A year later, the other eye became affected in the same way. Headache then came on, boring in character and located at the vertex, but subsequently becoming continuous and confined to the occipital region. In the left eye there was a large irregular central scotoma for form and color, and in the right eye a smaller scotoma. The fundus of the right eye was but little affected, but the left eye presented a declining neuro-retinitis and beginning atrophy of the optic nerve. The patient lived four years, with steadily failing vision. During the last year, she had repeated attacks of unilateral convulsions, became wildly delirious, and died in a violent general convulsion. The autopsy showed extensive pachymeningitis of the convexity of the left anterior lobe, some patches over the right anterior lobe and one large patch over the right parietal lobe. All the arteries at the base of the brain were thickened and their lumen narrowed.

The second case was in a young man aged twenty-four years, who had suffered from headache for more than a year, at first slight and transient, but increasing in severity and intensity. Six months later, muscular twitchings appeared in the upper extremities and face, with attacks of vertigo. The vision of both eyes became affected. In a paroxysm of general convulsions, the patient fell a distance of thirty feet, striking on his back, but without apparent evil result. There was concentric narrowing of the field of both eyes, which steadily increased; vision slowly failed. The optic discs, which were at first hyperemic, became pale and atrophied. About six months after the first convulsion, the man had two violent convulsions in rapid succession, which proved to be the last. He became irritable, grew stupid, and gradually sank into profound coma, in which he died. The autopsy revealed a large tumor involving the optic chiasm, both optic nerves and the hypophysis, which on examination proved to be a small-cell sarcoma.

The third case was in a man thirty-seven years old, who had suffered from severe headache in the left parietal and occipital regions for about nine months. Two months later, loss of vision in the right half of each field was detected. Six weeks before coming under observation, the sense of smell was suddenly lost. Examination showed vision in each eye to be 20/L and disclosed a bilateral right hemianopsia, with concentric limitation of the remaining fields. The man had had a chancre twelve years before. The intra-cranial lesion was believed to be a gumma and was located in the cuneus. In spite of treatment, there was a steady failure of vision, and muscular twitchings in the face and hands appeared. The man gradually became stupid, then comatose, and finally died, fourteen months after the first appearance of the headache. At the autopsy, an olive-shaped tumor was found in the cuneus on the left side, close to the median line. The growth proved to be a small-cell sarcoma.

The fourth case was in a woman seventy-two years old, who had suffered with headache for more than a year. Six months before coming under observation, she awoke with severe pain in the head and total blindness in the left eye. There were confusion of ideas, numbness of the right arm and leg, and thickness of speech. There was slight ptosis of both upper lids; speech was thick and slow; the tongue deviated to the right side; vision was 20/XL; there were slight lenticular opacities and bilateral left hemianopsia. The ophthalmoscopic examination was negative. It was thought probable that there had been a thrombosis followed by rupture of the middle cerebral artery on the left side. The woman lived for twenty months, vision failing, but the fields remaining unchanged. One morning she was found unconscious, and died three days later. The autopsy showed a patch of softening in the left anterior lobe; in a branch of the middle cerebral artery running through it was an old plug completely obliterating the lumen of the vessel. There was a recent rupture of a branch of the left middle cerebral artery and a large clot of blood in the middle lobe of the brain close to the Sylvian fissure. All of the arteries of the brain were diseased. At the base of the brain on the right side, overlying and pressing upon the right optic tract, was a tumor as large as a hazel-nut, situated just in front of the corpus geniculatum laterale. This proved to be a small-cell sarcoma.

The fifth case was in a man thirty-five years old, who for three years had suffered from severe headache, beginning in the frontal region, but gradually extending all over the head; at first intermittent, but later constant. There were occasional attacks of nausea and vertigo. Four years previously he had received a violent blow in the left parietal region, followed by bleeding from the left ear and rapidly increasing deafness. For nine months there had been diplopia, and for six weeks partial left heminesthesia. There was paresis of both external recti muscles. Vision in the right eye was 20/C; in the left eye 20/L. There was marked papillitis, with numerous hemorrhages. There were homonymous di-

plopia for all distances; irregular central scotoma for all colors; marked vertigo, with a tendency to rotate to the right side. A diagnosis of cerebellar tumor was made. Toward the close of life the man became nearly blind; he died in profound coma. The autopsy revealed a globular tumor in the right lobe of the cerebellum close to the peduncle. The growth proved to be a glio-sarcoma.

DR. CHARLES W. KOLLOCK, of Charleston, S. C., read a paper on "Monocular Amblyopia in the Same Family," reporting four cases cf amblyopia in members of the same family—two brothers and two sisters. In all the left side was affected.

DR. KOLLOCK also read a paper on "The Eye of the Negro." Many of the eye affections observed in negroes were traceable to syphilis and to the changed conditions in their life since the war. Ulcerative keratitis is quite common among the negroes, but trachoma is exceedingly rare. Cataract is equally frequent in the negro and white. Glaucoma is of equal frequency. Retinitis, optic neuritis, and choroiditis are not infrequent. Retinitis pigmentosa had not been observed in the negro. No case of embolism of the cerebral artery had been observed. Xerosis of the conjunctiva had been seen in one case in an adult. Orbital tumors seem uncommon in negroes. Two cases of abscess of the orbit had been seen in negro children.

Myopia was not common in pure-blooded negroes before the war, and is still rare. Three cases of myopia had been observed in the pure black. Comparatively few pure bloods have been examined for refractive error.

DR. W. F. MITTENDORF, of New York, read a paper on "The Frequency of Posterior Capsular Opacities at the Place of Attachment of the Hyaloid Artery." He called attention to the frequency of small round lenticular opacities, believed to be the remains of the fetal hyaline artery, or to mark the attachment of the artery to the posterior lens capsule. Of 1884 persons, these opacities were observed in 44 cases, a little more than 2 per cent.; they were observed more frequently in the right eye than in the left, and oftener in the male than in the female; not infrequently they were seen in both eyes. They vary in size from a dot as small as the point of a pin to one as large as a poppy-seed; frequently a magnifying power of a lens of five or six diopters is necessary to see them.

DR. OREN D. POMEROY, of New York, presented a paper on "Some Cataract Extractions with and without Iridectomy," which was read by title.

DR. CARL KOLLER, of New York, exhibited "Preparations of the Nerves of the Cornea." The peripheral nerves were stained by Ehrlich's method by the injection of a saturated solution of methylene-blue into the vessels of a recently-killed animal. The nerves of the cornea are colored in a beautiful manner, but the stain is only temporary, and does not permit of the making of preparations.

DR. T. Y. SUTPHEN, of Newark, N. J., read a paper on "Scleral Puncture in Detachment of the Retina." He reported two cases of detachment of the retina in which the sclera was punctured. In the first, useful vision was restored; in the second, the improvement was but slight.

DR. E. E. HOLT, of Portland, Me., reported "A Case of Orbital Cellulitis," in which the inflammation spread to the temporal region, thence to the neck, interfering with deglutition, and to the brain, producing death. Four other simliar cases were referred to.

DR. CHARLES J. KIPP, of Newark, reported "A Case of Recurrent Bilateral Inflammation of the Capsule of Tenon, in Connection with Mercurial Poisoning." The first attack followed an injury, but was succeeded by repeated attacks. The patient was employed in an incandescent electric lamp manufactory and had become poisoned by the mercury used in his work. The recurrences continued until he gave up this work. There has been no attack since a year and a half.

DR. R. A. REEVE, of Toronto, Canada, read a paper on "Pulsating Exophthalmos." He reported a case in which pulsating exophthalmos followed a trauma. It was thought that there was a lesion of the internal carotid, allowing the blood to enter the cavernous sinus. Pressure upon the carotid failed to control the pulsation. A year ago, the right common carotid was tied. Pulsation and bruit ceased for a few hours and then returned. Some months later, finding that compression of the left common carotid controlled the pulsation and bruit, this vessel was tied, but the pulsation still persists. There is pulsation in the right carotid above the seat of ligation. Pressure upon the right external carotid stops the pulsation and bruit absolutely.

DR. CARL KOLLER, of New York, read a paper entitled "Sub-conjunctival Application of Cocaine." He stated that by injecting a few drops of a 1 per cent. solution of cocaine beneath the conjunctiva, after the application of a 4 per cent. solution to the surface, tenotomy, cataract operations, and iridectomies can be performed without the slightest pain.

DR. KOLLER also read a paper on "The Form of Retinal Images in Astigmatic Eyes."

DR. CHARLES J. KIPP, of Newark, N. J., reported "A Case of Gumma of the Ciliary Body," and exhibited the specimen.

DR. F. BULLER, of Montreal, Canada, exhibited "An Improved Trial Frame."

DR. J. A. ANDREWS, of New York, showed an "Apparatus for Washing Out Cortical Matter." He also exhibited drawings of "Four Cases of Gumma of the Iris."

DR. LUCIEN HOWE, of Buffalo, demonstrated "A Pocket Ophthalmoscope."

DR. R. A. REEVE, of Toronta, described "A Modification of the Rotary Prism Test."

DR. JOHN GREEN, of St. Louis, reported "A Case of Hyaline Bodies in the Nerve Head."

The following officers were elected:

President.—Dr. Hasket Derby, of Boston.

Vice-President.—Dr. George C. Harlan, of Philadelphia.

Corresponding Secretary.—Dr. J. S. Prout, of Brooklyn.

Recording Secretary.—Dr. Samuel B. St. John, of Hartford.

Delegate to the Executive Committee of the Congress of American Physicians and Surgeons.—Dr. John Green, of St. Louis.

Alternate.—Dr. D. B. St. John Roosa.

The following were elected to membership:

Dr. J. A. White, of Richmond, Va.; Dr. Walter B. Johnson, of Paterson, N. J.; Dr. G. W. Hale, of Nash-

ville, Tenn.; and Dr. R. L. Randolph, of Baltimore, Maryland.

The next meeting will be held at New London, Conn., on the third Wednesday of July, 1893.

BRITISH MEDICAL ASSOCIATION.

Sixtieth Annual Meeting, held at Nottingham, July 26, 27, 28, 29, 1892.

FIRST DAY—JULY 26TH.

MR. JOSEPH WHITE, of Nottingham, delivered the President's Address, reviewing the development of the work of the British Medical Association and of British Medicine and Surgery since the last Nottingham meeting. He extended a hearty welcome to the participants in the meeting, and made reference to the geologic and sanitary conditions of Nottingham.

The British Medical Association last met at Nottingham in 1857. The meeting was a small one, as compared with the magnitude of the present congress. Some eighty or ninety members were present.

Credit was given to Sir Charles Hastings, the founder of the Association, for his assiduous zeal and labor, and his enlightened and enthusiastic efforts.

The original objects and aspirations of the Association were the collection of important medical and surgical knowledge arising from public and private practice in the great provincial centers and in rural districts; increase of knowledge of the medical topography of England, in its widest sense, and which could best be collected by those resident on the spot; investigations of the modifications of endemic and epidemic diseases in different situations and at various periods, so as to trace their connection with peculiarities of soil and climate, or with the localities, habits, and occupations of the people; and, perhaps, most important of all, the maintenance of the honor and dignity of the profession generally by promoting friendly intercourse and free communication amongst its members, and by establishing between them that harmony and good feeling which ought ever to characterize a liberal profession.

When the Association last met at Nottingham the number of members (and this represented a quarter of a century of successful work) was 2065; now it is more than 14,000. Then all the meetings were held in one small room, on the low pavement known as the Assembly Room; now the whole of the magnificent suite of rooms which the authorities of the town and the Council of the University College have most kindly and liberally placed at the disposal of the Association is required, and even these are not large enough for general meetings. Then the branches were confined within the limits of the southern half of Great Britain; now they extend to most of the British possessions throughout the world. In North and South America, in India and China, in Burmah, in the West Indies, and in the islands of the Mediterranean, at the Cape, and in Australia, there are numerous and increasing branches, and year by year an ever-increasing number of professional brethren are feeling the power and adding to the influence of the Association. But not only has the Association increased numerically and in the extension of its area, but it has increased in a still greater ratio in the character and importance of its work.

The address continued with an interesting historical and critical summary of the more important work that been done in the various departments of medicine in the last forty years.

SECTION OF MEDICINE.

The PRESIDENT, DR. W. H. RANSOM, of Nottingham, delivered an address on "Some Diseases of Plants Compared with Those of Man." The paper was based on a long though desultory study of diseases of plants, seen from the point of view of the student of medicine.

Inflammation in plants was defined as the reaction of living cells to irritation. All such reactions in plants produce what are, or may be, called galls, using the word widely, but some of them which occur in growing points are known as witch-knots. It may be convenient to add that a gall should be considered as a local hyperplasia, or overgrowth of tissue, which differs from a local hypertrophy in that it diverges in structure and form from the normal tissue or organ with which it is related, and injures, or at least does not benefit, the plant. The causes of such reactions, or in other words the irritants, may sometimes be mechanical or physical agents, or inorganic chemical substances, but as a matter of fact all those which have been most successfully investigated inhere in living organisms. These organisms are very diverse, so that nearly every order of insects presents us with some examples. Among the acari the Phytopi, or gall-mites, are the best known; some anguillulæ have long been known to produce galls, and some parasitic fungi, as well as certain as yet imperfectly classified organisms, also cause galls.

Numerous examples were given to show some of the grounds upon which is founded the hypothesis that the irritant is an organic chemical substance, and also to support the view that the process of irritation is some gentle, persisting disturbance of the metabolism of the living cells, during which cell-multiplication is inhibited where it first acts, but stimulated just outside that part. Such disturbance is propagated in some unknown way through the gall-tissue, so as to act differently at different distances in different directions, and may extend to tissues outside the true gall, and varies at different stages of the evolution of the gall.

The process of reaction, which is necessarily conceived of simultaneously with that of irritation, has its source in that fundamental faculty of repair and reproduction which plants, in common with all organisms, necessarily possess. The power of reaction to irritation resides in all the living cells, although most marked in the younger, as is also true of the processes of repair and of reproduction. The process itself may be conceived of as a compensative cell-proliferation directed and modified in its character by the irritant, so that the result is at once heterologous and specific.

When a part of a living plant is injured, it dies if the damage be serious, and the nearest living cells multiply, so that in wounds of parenchyma one and the same kind of tissue, known as cork, always results, whatever may have caused the injury, and in wounds which involve the great cambium, repair is effected by another tissue, known as callus, which is always the same whatever may have produced the injury. Repair, then, is not specific in relation to the cause of the injury, but in similar tissues is always the same. Both cork, which is the scar-

tissue of plants for injuries of parenchyma, and callus, which is the same for wounds of axes, are normal and permanent plant-tissues, and the latter has within itself all the potentialities of the whole plant, being able to reproduce roots and shoots. The whole process of repair is a physiologic one, that of reaction to irritation a pathologic one, and it is only when the two processes are mixed that confusion can arise.

As all the reactions to true irritation are by the hypothesis inflammations in plants, this expression includes both those well-defined galls of complex structure and somewhat independent life which are usually called tumors of plants, and those more variable and indefinite local hyperplasiæ due to irritation, which are often so slight as to escape attention, and would more naturally be spoken of as inflammation. In all, however, the irritant directs the reaction and the product is specific. Malformations, such as witch-knots, etc., probably belong to the same category; they differ from galls mainly in that the reaction which produces them results from the irritation of a developing germ, and that it produces rather an abnormal arrangement of otherwise normal organs than a true local hyperplasia.

As morbid processes in plants belong to the domain of general pathology, they may properly be considered in relation with the corresponding processes in animals.

The following general theory of inflammation was proposed:

In virtue of those necessary and inherent faculties by which all organisms repair damage, living cells react in response to true irritations by a proliferation with modification directed by the irritant, and not beneficial to the organisms in which the process occurs.

According to this view, all inflammations are specific, From the purely clinical standpoint many inflammations would still be spoken of as simple or common, but with the progress of etiologic knowledge the number of specific inflammations would increase at the expense of those which from lack of etiologic knowledge only are called common.[1]

The arguments used in reference to inflammation admit of application to fever, although the equivalent of that process is not yet recognized in plants; but remembering how many fevers are now known to be specific, their intimate connection with inflammations, and the specific effects of poisons and drugs both upon the organism as a whole, and upon the several organs and tissues, such an extension of the doctrine, which is indeed apparently a necessary corollary from the truism that causes are factors which must always effect the results in some degree, would have some basis of support.

The greater complexity of structure and function in the higher animals than in plants, and especially the more immediate dependence in the former of every tissue and organ upon the integrity of the nervous and circulatory system, sufficiently account for those differences in the inflammatory process which are known to exist.

SECTION OF SURGERY.

The President, MR. JOHN CROFT, of London, opened the session with an address in which he briefly adverted to the three topics selected for discussion. He made the following propositions relative to the surgical treatment of pleural effusions, serous or puriform: 1. Early evacuation is the best principle to act upon. 2. The exclusion of air when practicable and the observance of aseptic or antiseptic *technique* should be rigidly observed. 3. Complete and perfect drainage of the cavity under treatment is essential, including counter-openings and large openings into the pleura or other pus-holding cavities. 4. Large cavities require adequately large openings. 5. Ribs and periosteum, intercostal vessels and nerves may be largely excised with advantage immediate and prospective, so long as ordinary precautions are observed. 6. Lack of early and adequate operations is an important, though not the exclusive cause of delay in the closing of cavities. 7. Lung-abscesses and gangrene and bronchiectatic cavities, with certain obvious exceptions, are amenable to surgical exploration and treatment. 8. Hydatid cysts in the lung or pleura may be successfully extracted or otherways cured by thoracotomy.

When an enormous pleural cavity is bounded on one side by a collapsed, movable, swinging, dangling lung, and on the other side by rigid bony wall, the difficulty is a formidable one, particularly when there is little or no disposition to the formation of granulation or cicatricial tissue. Sponge-grafting has failed. Abstraction from the wall of the chest of a great portion of its bony rigidity does not necessarily succeed.

In this connection the question arises, Would the removal of the useless swinging lung, at or near its root, be a safe and useful measure? Its presence is an obstacle to the cessation of discharge from the pleura, and its removal would be a step half-way to cure, if adequate measures for its fixation have failed of their purpose.

Tuberculous cavities associated with other tuberculous deposits and multiple bronchiectatic cavities have as yet proved insurmountable diseases and difficulties.

Since the introduction of antiseptics and aseptic modes of operating, a decided improvement has taken place in dealing with the pericardium and its troubles. It does not present the same conditions for difficulties and such exceptional states as the lungs and pleuræ.

Brilliant as are the results obtained in the surgery of the liver and gall-bladder, there remain difficulties yet to be overcome and questions yet to be settled. Among these are: 1. The treatment of hydatid cysts of the liver which have already opened or which threaten to open into the chest. 2. The question of early operation in cases of cholelithiasis. 3. The desirability of suturing the incision into the gall-bladder and of then closing the abdominal incision and cavity. 4. When the gall-stone is impacted in the duct and cannot be reached through the gall-bladder, should the duct be incised and the incision sutured, the omentum being employed to strengthen the fastening? 5. The question of whether ligature of the cystic duct without cholecystectomy is to be preferred to other operations. 6. The cases in which cholecystectomy is to be preferred to less radical procedures. Lastly, the interesting topic of cholecystenterostomy will arise—when it is to be resorted to and the best mode of carrying out the operation.

The subject of the surgical treatment of tuberculous disease is still one of the burning questions of the day.

[1] By this theory in animals, as well as in plants, all tumors due to a reaction to irritation would be included in the term inflammation, as probably also would be some of the malformations.

In spinal diseases we have a study of tuberculous disease of bones and joints. The essential pathology of disease is the same whether the neoplasm is in bones or joints of limited mobility—as in the spine—or in the bones or joints of the utmost mobility in the extremities.

In discussing the treatment of tuberculous abscesses connected with disease of the bones and joints of the spine, the vexing questions as to shortening of the limbs, arrest of growth from excision of epiphyses, flail-like joints after operation, acute infective tuberculosis after excisions, do not, or should not, embarrass the discussion. No one, as far as known, has yet attempted cure by excising the vertebral column with the joints.

There are at least two most remarkable lines of practice that widely differ from the old modes of treatment: The cure of tuberculous spinal abscesses, without septic sinuses, by repeated aspirations and iodoform-injections, no larger operations than those being performed; and the cure of the same condition of large abscesses by free incision, evacuation of all cheesy deposits and sequestra, obliteration of the lining tuberculous membrane without the permanent introduction of an antiseptic, and these proceedings followed by complete closure of the wound without draining.

SECTION OF PSYCHOLOGY.

The President, DR. W. BEVAN LEWIS, L.R.C.P. Lond., of Wakefield, delivered an address "On Some Desirable Extensions of Asylum Administration." He dwelt upon the importance and the necessity of having a competent pathologist in the service of every insane asylum. To facilitate the training of men in institutions that have no regular pathologist, leave of absence for a varying period should be granted to house-officers for the purpose of special tuition. By the establishment of out-patient departments in connection with insane asylum cases may be secured in the earliest stages of mental disease. Courses of lectures on nursing and ambulance service constitute a most commendable feature. Out-door private nursing may be provided by choosing a certain number of skilled nurses as a private nursing staff, temporarily resigning their positions on the staff, their wages and incidental expenses being paid out of a fund accruing from their earnings. The vacancies on the staff thus created are filled by probationers, who offer their services unpaid for instruction in nursing and who succeed to the vacancies occurring from time to time from resignation and other causes.

SECTION OF PATHOLOGY.

The PRESIDENT, MR. VICTOR HORSLEY, of London, made some introductory remarks. He stated that pathology, as such, is almost unknown. What is commonly spoken of as "pathology," taught as "pathology," and made the subject of examinations in "pathology," is not pathology, but morbid anatomy.

The pathologist should be the student of disordered function as well as of disarranged structure; morbid anatomy is, therefore, but one side of his work; pathology is the other. What is required at the present day is the accurate determination of the aberrations of normal function, and, judging by the strides normal physiology as a science has made, no difficulty attends the pathologist in this new and fertile field. A mass of facts has been accumulated in elucidation of the various changes in the structure of the lungs produced by pneumonia, phthisis, etc.; but how many workers have been found to investigate the degree and effect of the loss of the respiratory function, of the disorder of the normal oxygen and carbonic acid ratios? Yet this is it that kills; this is the whole work of the disease, and this is what must be solved before the treatment of such diseases can be worthy of mention other than as mere empirical palliation. This, the pathology of the diseases of the respiratory organs, is a subject before which the facts of morbid anatomy will seem more and more restricted as the intricacy and breadth of the problems it is often supposed to solve are properly considered and appreciated.

Another example—a much smaller one, but involving most fundamental considerations—is the condition spoken of as edema or dropsy. What is more common at the present day than to hear this condition gravely ascribed to alterations in the blood-pressure alone, and chiefly to venous stagnation? Yet this view has for more than twenty years been absolutely contradicted by experimental pathologists, and shown to be untenable. This surprising indifference to pathology is due to want of familiarity with modern progress in physiologic and chemical research. Fortunately, laboratories are springing up now on all sides, original investigations are being pushed forward, light and knowledge widely diffused. The reproach that we have been dead-house students rather than true pathologists will, therefore, soon be wiped away.

SECTION OF DISEASES OF CHILDREN.

The President, DR. LEWIS W. MARSHALL, of Nottingham, delivered an address on "The Need for Systematic Instruction in Diseases of Children." He deplored the lack of practical instruction in the recognition and management of the diseases of children. To this deficiency are to be ascribed many of the false traditions that remain, and not a few of the ills from which children suffer.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

The President, DR. J. O. BROOKHOUSE, of Nottingham, delivered an address on "Some Points in Pharmacology and Modern Therapeutics." Medicine, in its largest and broadest significance, is at once an art and a science, and is based upon observation, experiment, and practice. As a science it must necessarily be inexact, for it deals with the highest organism—that of man—under conditions the most uncertain, unstable, and complex. Hence the apparent fallacies in experiment, the errors in observation, and the slow and uncertain advance in practice. In purely and simply experimental research and laboratory work, at least some of the ordinary sources of fallacy may be controlled or eliminated, and thus more definite and correct conclusions be arrived at. To few, however, are such opportunities afforded, and with the rank and file of the profession rests not merely the recognition of disease and its treatment, but to no inconsiderable extent the advance of medicine in its practical issues.

If, however, it cannot be claimed that experimentally very large additions have in recent years been made to our powers of cure, in two directions at least there have

been originated methods of procedure which have already added somewhat to these powers, and which are of great promise for the future. Most of our present remedies are the outcome of experiments made on natural products, animal, vegetable, or mineral, or on compounds which the chemist has put at our disposal in his efforts to penetrate those secrets of nature with which he is specially concerned.

Chemistry has taught us that the various organic groups may be combined in an almost infinite variety of ways, and that it is possible thus to produce thousands of new bodies, each of which will have a special action on the tissues and organs according to the groups of which they are composed, and the method by which the groups are united. Of late the chemist and the pharmacologist, working together, have built up for medicinal use a large number of these new compounds, joining together organic groups for definite purposes.

At least a score of new substances have been introduced during the past twelve months for the purpose of fulfilling some definite therapeutic want, and though doubtless many, probably the majority, will not be of practical service, still there is evidence that some may prove to be very useful medicinal agents, and there is great hope that with increasing knowledge new compounds will be formed which will be of incalculable value in the treatment of disease.

The second therapeutic departure to be noted is for the most part one of promise only. It comprises the use of the products of the lower forms of life which are connected with disease, or, again, of the use even of microbes themselves as therapeutic agents.

The question whether the experiments made on the lower animals will enable us eventually to deal effectively with infectious diseases in man is one of great interest and importance.

It is quite possible that some methods of treatment, founded on the knowledge which has been gained by the influence of microörganisms and toxines, may not prove capable of practical application; if, however, this be the case, certain facts as to this influence are proved, and we have good grounds for hoping that further experiments made on the use of microörganisms and their products will before long put in our hands new therapeutic agencies for the cure of infectious diseases in man.

Any reference to modern therapeutics would be incomplete without a passing glance at modern diseases. One cannot be unobservant of the vast proportionate increase during the past twenty years of diseases of the nervous system. The business and social conditions of daily life are vastly altered. We live at high pressure. Competition, rapidity of travel, ambition, the struggle for wealth, place, and power, with all the anxieties, cares, and worries involved therein, the exactions of social life, what is spoken of as "hurry," and a thousand and one other such things, have undoubtedly been productive of serious functional nerve-disturbances previously unknown, whilst others involving coarse lesions have been rendered more common. Further, long-continued functional disturbance alone may, and not infrequently does, bring about organic change, such change being the outcome of perverted and impaired nutrition.

In these conditions of physical strain and mental tension we have a state provocative of nerve-changes both coarse and subtle, but all degenerative in type. With these, therapeutics has not, and cannot, keep pace. The requirement of the sufferer is for speedy, nay immediate, relief; but the call is in vain. We now, no more than formerly, have the power to build up new and healthier tissue. The human machine refuses to acknowledge any law other than the law of nature, and there is no therapeutics outside the universality of her harmonies.

Seven cases of pulmonary tuberculosis, at various stages, were reported satisfactorily treated by intra-tracheal injections of menthol.

The method consists in the introduction once or twice daily into the trachea of one dram of a 12 per cent. solution of pure menthol in pure olive oil; this is effected by the aid of the laryngoscope, and a syringe specially made with a curved tube; the tube is passed through the rima glottidis, about half an inch down the trachea. After a little practice and habituation, the patient feels no inconvenience or discomfort whatever; on the contrary, there arises an agreeable sense of warmth in the chest. An early result is a marked diminution of the cough and expectoration; the night-sweats, if previously existant, cease; the hectic temperatures become less marked, the curves become normal, and the patients gain in weight.

Despite therapeutic and pharmacologic advances; despite new remedies and new methods of cure, the tendency, in increasing measure, of modern thought and practice is toward the recognition and employment of preventive as distinguished from curative medicine. A larger and better understanding and observance of the laws of health, a more perfect knowledge of the causes and spread of disease, the attainment of a higher educational and intellectual standard, have in part contributed to this. May not also the thought of the inadequacy of curative medicine in grappling with disease constrain us to endeavor rather to anticipate those conditions which appear to underlie and give rise to morbid change? And in matters of personal health this question dominates the entire position. It is unquestionably easier, for instance, to employ measures to maintain the standard of health, even in those, for example, phthisically disposed, than it is to arrest the disease when once in activity.

SECOND DAY—JULY 27TH.

ADDRESS IN MEDICINE.

DR. JAMES CUMING, of Belfast, delivered the Address in Medicine. He considered the position of medical science in the general world of thought and its relations to certain other branches of knowledge with which it is allied.

In view of the extent to which certain of the natural and experimental sciences, namely, chemistry, botany, and physics, have grown, the question arises as to restricting the limits within which these should be taught the medical student. Would not the principles of chemical science suffice amply for his practical wants, which after all are comparatively simple? When the practitioner of medicine has tested for albumin and sugar, and is familiar with the composition and reaction of a few urinary deposits, and knows that a condition of acidity may be temporarily relieved by an alkali, he has pretty completely gained all the information of practical

value which chemistry is likely to give him for the needs of his daily work. The tests for the principal poisons and alkaloids may, perhaps, be added.

As regards botany, does the botanic source of our remedies in any way elucidate or guide us in their application, or would the majority of us recognize the plant in its growing or dried form from which we derive our most valued agents?

As for natural philosophy, everyone will admit that any considerable, not to say profound, knowledge of subjects which have received so much attention at the hands of physicists, and which have been worked out with such minuteness and care, and of which the full comprehension entails so much mathematical acquirement, are altogether beyond what may be fairly required from a student of medicine.

It may be urged that the study of the ancillary sciences, as they have sometimes been called, is of high importance to the discipline of the intellect, and tends to develop the habit and the power of careful and accurate observation; and this may be admitted in the fullest and most ungrudging manner. But the powers of the average human intellect are far from illimitable, the capacity of attention is bounded, and the sum of mental energy requires to be carefully husbanded, to be directed in the right channels and not to be allowed or compelled to dissipate in useless effort.

Our anatomy must be thorough, though not unnecessarily minute and elaborate. It should be learned so that the body will be, as it were, transparent to the eye. Then we can afford to dispense with no considerable portion of the wide and fruitful field of physiology, a science which is now so extended and so rapidly increasing that many men of science are specializing themselves on different portions of its vast territory.

Among the subjects of greatest present interest there are two that seem to give evidence of distinct currents of thought moving apparently in opposite directions. On the one hand, we find an important part in pathologic and physiologic processes ascribed to minute organisms, the white corpuscles or leukocytes, which are apparently free from all direct nervous influence and float freely in the blood; and, on the other hand, we find that the domain of the most highly organized and differentiated part of the body, the nervous system, is being extended and increased.

A new cellular pathology is being developed, differing widely indeed from the brilliant theory bearing this name, so long familiar to us from the powerful advocacy of Virchow; but agreeing with it in the important functions assigned to the ultimate elements of the body as independent factors, both in morbid and in healthy processes; and also in representing them as being either uninfluenced or as only indirectly influenced by the nervous and vascular systems in some of their essential activities.

The study of medical psychology alone is a very incomplete and inadequate preparation for comprehending the multiform disturbances of mental function, and is even more inadequate in respect of either diagnosis or therapeutics, and in regard to the expectation of adding to our knowledge of cerebral diseases, as regards either localization or character.

Some knowledge of psychology proper, that is of the science of the phenomena of mind in its normal conditions, is absolutely necessary. Without an acquaintance with the problems and methods of psychologic inquiry it is impossible to observe and to describe adequately the phenomena of morbid mental states. In the investigation, also, of those conditions in which the disturbance of a single function is what is most manifest and striking, it is clear that a knowledge of the limits and differentiation of function must be of capital importance. It will be of value also to become familiar with the terms used in psychology, in itself a study of no inconsiderable difficulty and extent. In dealing with such questions as amnesia, aphasia, delusions and hallucinations, and other disturbances of consciousness we are not only in the sphere of our legitimate activity and of our daily work, but we are touching, not indirectly, on some of the most interesting problems of mind.

We need not attempt the great metaphysical questions of substance, reality, the nature of consciousness, the ontologic nature of space and time, the essence of causal action, and the like. The domain of the clinical and pathologic observer is an humbler but a more fruitful one. Just as biology concerns itself with the manifestations of life and puts aside all theories regarding its nature and origin, just as in fact all sciences have to resolutely set aside at the beginning a certain number of unsolved questions, so we may fairly relegate these problems to other and more competent authority.

Nor is much to be gained at present by attempting to form any wide generalizations. A working hypothesis is, no doubt, of the highest utility in an experimental science, even if it ultimately comes to need to be corrected or to be altogether abandoned; and if the facts that come before us were capable of being called into existence, or of being modified at pleasure, such an hypothesis might be necessary for our guidance. But we have to deal only with phenomena not susceptible of voluntary modification, and what we have to do is simply to observe them with accuracy and to record them with fidelity. In these observations the materialist who regards mind as a form of motion in the brain-cells, and the spiritualist who looks on it as an immaterial principle underlying the phenomena of consciousness, although acting through the nervous system, can work together in perfect harmony, as the problem is to observe and analyze the phenomena brought before them. Even in this task there are limits set to our observations that it is not easy to surmount or evade.

One of the definite lines on which medical observation might be of the greatest value in elucidating some unsettled problems is furnished by the aberrations and decay of memory. For this species of observation no apparatus is necessary, and the opportunities are daily offering themselves, and most abundantly, to the busiest practitioner.

Nor even in a therapeutic sense will studies of this kind fail to bear fruit in enabling us to deal more rationally and more successfully with the morbid conditions of this important portion of the economy. It can hardly be denied that there is a tendency among the most enlightened members of the profession to attach a less overwhelming importance to the administration of medicinal agents, and to have recourse to the employment of them instead of what may be called physiologic

remedies for the treatment of the morbid conditions of the mind and brain. Light, air, nutriment, environment, the warding off of hurtful, the presentation of soothing impressions, these are more frequently and more successfully employed than the large class of nervines, of the remedial actions of which we are not so certain as we could wish. And when we add to these the so-called moral treatment, comprising amusement, occupation, and the like, we have enumerated most of the agents on which we most confidently rely.

The numerous and potent additions that have been made of late to our stock of nervine remedies should not be underrated. They are to be considered as constituting a great arsenal of warlike weapons of the newest construction and the most perfect adaptation to their purpose, kept always ready for use and in a thoroughly efficient state of order and readiness. But as it is the highest and most successful statesmanship not to be obliged to employ these powerful weapons in actual warfare, so we best vindicate the efficiency of our art by having recourse to our armaments only as sparingly as may be; confident, however, that at critical moments and in periods of active disturbance they can be employed with great and admirable effect.

It will always also be of great aid to the physician to be able in dealing with those committed to his care to recognize the influence on them of ideas of hope, of confidence, of endurance; to be able to deduct from their complaints what is the result of an impressionable nervous system and what of pure imagination; to solve, as nearly as may be, the personal equation. These capabilities will supplement beneficially the most refined and accurate physical diagnosis. We need not doubt that the multiform aspects of disease, following, as they do, closely on the track of all the numerous and diversified forms of human energies and activities, will afford ample scope for the freest exercise of the highest scientific faculty, as well as for the employment of the most minute and patient observation. The tendency of the medicine of the future will no doubt be in the direction of greater specialization. Physicians and surgeons will devote themselves, more and more, to the cultivation of a limited portion of the vast and always widening field of knowledge. Medicine must adapt itself to the varying necessities and requirements of the world. It must prove itself capable of supplying the wants of civilization, rapidly becoming more complex in its development, and therefore more varied as well as more exacting in its demands. It must press into its service all knowledge, physical and mental, likely to aid in the furtherance of its mission; accepting the help of its sister sciences, but allowing itself to be dominated by none of them. It must be alike flexible in its methods and steady in its aim; and it must be at once cautious and inspiring, always sane in practice, while bold in speculation. But at the same time it behooves all those concerned in its guidance, or responsible for the instruction of those who are to become its members, to bear in mind its position as one of the main supports of the tripod of learning, as one of the great factors in the intellectual progress of humanity; being well assured that it cannot sacrifice any portion of its intellectual elevation and dignity without a corresponding sacrifice of its truest and most practical usefulness.

THIRD DAY—JULY 28TH.

ADDRESS IN SURGERY.

DR. WM. H. HINGSTON, of Montreal, delivered the Address in Surgery. He stated that the average surgeon of to-day is less a man of thought than a man of action. He is constantly liable to disturbance, either from the particular character of his calling, or from the agitation of all around him, of which he soon partakes. He is made to eschew the more meditative habits that would the better fit him to weigh well and to adopt or reject what should be adopted or rejected, without reference to authority or without being swayed by the influence, not always safe and reliable, of superiority of position or of condition.

Perhaps, at no time in the history of the medical art have the facilities been greater everywhere than they are at present of arriving at conclusions that may not be intelligent, and of being misled by representations that may not be strictly true. With steam and electricity, and the wondrous and unceasing development therefrom of vast physical agencies, men are brought nearer to each other. Truth travels with the speed of lightning, but error also, and with like rapidity. Opinion, formed in a large center, acts especially on the imagination of those around, and more powerfully still, perhaps, of those at a distance. It does not always convince, but it impresses, and it has the force of authority rather than of reason; and concurrence in it is not always an intelligent decision, but a submission or belief.

English surgeons were little disposed to believe that a sponge probang, charged with solution of nitrate of silver, could be got beyond that watchful sentinel, the epiglottis, and be applied to the larynx. Who doubts it now? The same may be said of Sayre's assertion, discredited at the time, that after excision of the bones of the hip-joint the joint could be so arranged that the little patient could be borne from one place to another and without injury.

The American surgeon arrives, in his own way, and with marvellous celerity, at the chief points in a case—at its gist, its essence, so to speak—by a process which may not be strictly called logical, but which partakes rather of an intuitive intellectual judgment or perception. He seems to recognize truth, or something he takes to be truth, without any elaborate process of ratiocination. This marked quality in the American mind renders him prone to eclecticism, not alone in medicine and surgery, but in philosophy, and even in matters of theology sometimes.

The relatively greater freedom from death in Canada after surgical operations is to be ascribed to climatic influences. The inflammations which sometimes follow surgical procedures are accentuated, and are marked by much elevation of temperature; but the character of those inflammatory processes is of a simpler, plainer, more sthenic type, and not of that irritable form which so often perplexes hospital surgeons in the larger centers of Europe.

Canadians are subject to few ailments, and these are of asthenic inflammatory type. Thorough acclimatization is found to confer additional immunities. Those who can count the greater number of generations born in Canada are the healthier, while those undergoing the process of acclimatization do not suffer in the processive

state. These remarks do not apply to the descendants of the aborigines who have been allied to the whites.

There are no surgical diseases in Canada which have not their counterpart in every portion of Europe, except frostbites and the *mal de raquette*. Aneurisms are not common in Canada; chronic rheumatic arthritis is seldom met with; rickets is scarce; strumous ophthalmias are not frequent; and in carcinoma, especially of the breast, the glandular system is not generally primarily affected, affording thereby a fairer chance of freedom from early recurrence of this disease.

On the eastern coast of New Brunswick, in Canada, a few lepers are met with in the lazaretto there; but the disease is not indigenous to the soil.

As acclimatization effects certain changes, it affords also certain immunities from which those not similarly circumstanced cannot expect to benefit. The acclimatized bear injuries well. Living in a simple primitive state, they require occasional aid from the surgeon, and less from the physician. Colonists in thinly settled districts sometimes send long distances for surgical aid in cases of hernia or dislocations.

Domestic surgery in civilized countries might in some things learn a little from the primitive methods of the aborigines. For instance, the treatment of the newborn by the latter is judicious. The yielding abdominal walls are never compressed by an unyielding bandage, and the young bird in its nest is not more comfortable. As the varied movements of respiration are not impeded, the infant cries but seldom. It never suffers from the local troubles that the children of the whites often do. The urine is carried beyond the infant's person, if a male, by an ingenious mechanical support which directs the stream. Feculent matter is received into dry moss, which is to be found in large quantities in every wigwam where there is an infant.

If in the depths of the forest an Indian breaks his leg or arm, splints of softest material are at once improvised. Straight branches are cut, of uniform length and thickness. These are lined with down-like moss, or scrapings or shavings of wood, or with fine twigs interlarded with leaves, if in summer; or with the curled-up leaves of the evergreen cedar or hemlock, if in winter; and the whole is surrounded with withes of willow or osier, or young birch. Sometimes it is the soft but sufficiently unyielding bark of the poplar or the bass-wood. Sometimes, when near the marshy margin of our lakes or rivers, the wounded limb is afforded support with wild hay or reeds of uniform length and thickness.

To carry a patient to his wigwam or to an encampment, a stretcher is quickly made of four young saplings, interwoven at their upper ends, and on this elastic, springy couch the injured man is borne away by his companions. When there are but two persons, and an accident of this nature happens to one of them, two young trees of birch or beech, or hickory, are used. Their tops are allowed to remain, to aid in diminishing the jolting caused by the inequalities of the ground. No London carriagemaker ever constructed a spring which could better accomplish the purpose. A couple of cross-bars preserve the saplings in position, and the bark of the elm or birch, cut into broad bands, and joined to either side, forms an even bed. In this way an injured man is brought by his companion to a settlement, and often it has been found, on arrival, that the fractured bones are firmly united, and the limb is whole again. This is effected in less time than with the whites, for the reparative powers of these children of the forest are remarkable. In their plenitude of health, osseous matter is poured out in large quantity, and firm union is soon effected.

The healing powers of the aborigines, when injured, are equalled by the wonderful stoicism with which they bear injuries and afflict upon themselves severest torture. They are accustomed to cut into abscesses with pointed flint; they light up a fire at a distance from the affected part (counter-irritation); they amputate limbs, and sometimes they amputate their own limbs with their hunting knives, checking the hemorrhage with heating stones, as surgeons were accustomed to do in Europe in the time of Ambrose Paré, with more *sang froid* than many young surgeons will display when operating on others. The stumps of limbs amputated in this primitive manner are well formed, for neatness is the characteristic of all the Indians' handiwork.

The aborigines are familiar with, and practise extensively, the use of warm fomentations. In every tribe their old women are credited with the possession of a knowledge of local bathing with hot water, and of medicated decoctions. The herbs used are known to a privileged few, and enhance the consideration in which their possessors are held.

The Turkish bath, though in a simpler but not less effective form, is well known to them. If one of their tribe suffers from fever, or from the effects of long exposure to cold, a steam bath is readily improvised. The tent of deer skin is tightly closed, the patient is placed in one corner, heated stones are put near him, and on these water is poured till the confined air is saturated with vapor. Any degree of heat and any degree of moisture can be obtained in this way. Europeans often avail themselves of this powerful sudatory when suffering from rheumatism.

The aborigines have their herbs—a few, not many. They have their emetics and laxatives, and astringents and emollients, all of which are proffered to the suffering without fee or reward.

The "Indian teas," "Indian balsams," and other Indian "cure-alls"—the virtues of which it sometimes takes columns of the daily journals to chronicle—are not theirs. To the white man is left this species of deception. The necromancing *medicine man* doubtless practises deception, but he is, in turn, impressed by the energy of his own incantations; and failure on his part to cure exposes him to personal danger.

In the larger Canadian cities surgery in every department is pretty much what it is in the more favored centers of Europe. There is as much refinement in diagnosis, as much dexterity and courage in performing surgical operations, and as much nicety in the technique. All the cavites of the body, brain, chest, and abdomen have been explored and the diseased organs operated upon. Canada follows Europe closely, very closely, in all her work. She has had the boldness—may she be pardoned—to precede Europe in some departments of surgery. The tongue and lower jaw were together first removed in Canada; the innominate and the gluteal arteries were first ligated in Canada; and the credit of

the first nephrectomy, which writers give so generally to Germany, belongs to Canada and to Montreal. But why should Canada be in any way behind? The better classes of her students, not content with receiving instruction in their own medical schools, pass one, two, sometimes many years in Europe before commencing the practice of their profession in Canada. London, Dublin, Edinburgh, Paris, Vienna, Berlin are never without a contingent of young Canadian graduates, and many Canadian medical practitioners periodically visit Europe to add to their stock of acquirements and to renew the zest and relish to professional labor.

Whether a mixed or an unmixed good—the art of surgery is becoming more and still more divided into an ever-increasing number of special or particular branches of study or pursuit, each branch having its respective province or domain, which, it cannot be denied, is sometimes kept more distinctly by an exaggerated interpretatation of its importance. Yet each must ever remain cognate to and in close relationship with every other department of the art, for there are no limits or boundaries to their various departments, and a seemingly intimate acquaintance with one and a total nescience of others are crass ignorance of all, for "all are but parts of one stupendous whole."

FOURTH DAY—JULY 29TH.

ADDRESS IN BACTERIOLOGY.

DR. G. SIMS WOODHEAD, of London, delivered the Address in Bacteriology.

Had it been stated twenty years ago that one of the annual addresses delivered before this Association would be devoted entirely to a review of the subject, or part of the subject, of bacteriology, such statement would have been received as coming under the category of prophecies not likely to be fulfilled.

Bacteriology, though a comparatively new science, has already made so deep an imprint on the science and practice of medicine that the enumeration in catalogue form of the various facts upon which, according to our present knowledge, the solution of important medical and surgical questions depends, would occupy too much time. This address will indicate briefly the extension and limitation of the bacteriology of medicine. Extremists have little claim to be considered in the matter, and although most thoughtful men maintain that bacteria play a most important *rôle* in the production of disease, it is equally certain that no claim for anything beyond such important share can be claimed for the most virulent of pathogenic microbes.

A knowledge of the life-history of bacteria and the relation of these organisms to specific infective disease is essential to every scientific student of medicine.

It has been too much the fashion to look upon bacteriology as an art rather than as a science. It was supposed that when evidence had been obtained that a definite microörganism was associated with a specific disease, and that when a means had been found of preventing its access to the tissues or of destroying this organism, the limits of what bacteriology could teach would be reached. Thanks to the genius of a Pasteur, however, bacteriology is now looked upon as a branch of science the study of which may afford help in the solution of even fundamental problems in biology; it has assumed such importance, indeed, that into its service have been pressed the general biologist, the botanist, and the pure physiologist; whilst all who practise medicine and surgery feel that they must, at least, be conversant with the principles that underlie its study.

It would be a waste of time to attempt to trace the history of fermentation, of putrefaction, of septic conditions, and of the relation of bacteria to certain diseases, but it may perhaps be of advantage to insist that there has been a continuous evolution and extension of theories in regard to the nature of the action and inter-action of bacteria on the tissues and organs of the human body. First, there was the mechanical theory, in which it was maintained that death was due to the impaction of groups of microörganisms in the capillary vessels; then came the theory that these organisms used up the oxygen so rapidly that the tissues received an imperfect supply, and somatic death ensued. Both of these may be partial explanations, but unless it is known how the oxygen is cut off (even accepting this explanation as partially correct), a satisfactory solution of the difficulty is yet wanting. The administration of phosphorus is followed by imperfect oxygenation of the tissues, and fatty degeneration occurs. How this is brought about it is difficult to say; similar degenerations are found in certain diseases set up by microörganisms. Do such organisms, then, when introduced into the body, act directly by taking up and using for their own purposes the oxygen which would otherwise be applied to the nutrition of the tissues? Do they attack the tissues directly, making their way into their substance, and so devitalizing them that they are unable to perform their functions properly? Do the products formed by these organisms, being thrown out, as it were, in a nascent condition, immediately lay hold of the weakly combined oxygen in the blood, and remove it so that new compounds may be formed? Do these products act directly on the cells, and interfere with their functional activity? Or, lastly, do the cells when called upon to perform extra work in getting rid of these organisms or of their products—which in either case must be looked upon as foreign bodies—undergo such excessive stimulation that the supply of oxygen is not equal to the demand, so that the functional activity of the cells is in excess of their facilities for nutrition, and their protoplasm undergoes changes described as cloudy swelling, followed by fatty degeneration exactly like those met with in phosphorus-poisoning?

At one time it would have been deemed impossible to answer these questions; but as the study of the chemistry of bacteria has been utilized, information on these points has become more and more definite, and as such definite information has been obtained, it has become possible to indicate at least some of the processes that are going on in certain of the specific infective diseases, and to draw inferences, some of which, however, have still to be put to the proof, as to the methods to be adopted in waging war against bacteria.

One of the most important outcomes of the study of the relations of bacteria to disease is the development of a pathologic chemistry; hitherto pathologic chemistry has been elaborated and extended in order that it might be applied to the examination of certain products and ex-

cretions met with as the result of diseased conditions of various organisms; but beyond facilitating search for slightly modified physiologic products, this physiologic chemistry has rendered but little service. This pathologic chemistry has a great future.

There is not a sufficiently marked line of demarcation drawn between the curative effect of the antitoxic action and the production of immunity; the two are perfectly distinct, though they are too frequently inextricably confounded in respect to the interpretation of experiments.

It is to an ultimate modification of the protoplasm of the cells of the body under the influence of organic or inorganic therapeutic agents that future triumphs must be looked for in the treatment of specific disease where vaccination has not been resorted to or has failed. Of this direct action on protoplasm there are only two or three examples, but there can be little doubt that quinine and arsenic in malaria, and mercury and perhaps potassium iodide in syphilis, act somewhat in this manner. In the case of mercury, even the untoward results sometimes attending its exhibition afford evidence of the direct action of the mercury on the protoplasm of the cells, the cells, as it were, becoming exhausted under the influence of the mercury, and so becoming an easier prey to the specific virus.

Should it be definitely proved that antitoxins are formed as the result of the action of certain bacteria on the tissues and fluids of the body, such a method—as at present within reach—could prove of little practical value in the treatment of disease, for in the cases mentioned, in which any definite results have been obtained, very large quantities of the blood or serum from immunified animals have been used in order to obtain the results described, and it is difficult to imagine how it would be possible to obtain sufficient of the antitoxin from living animals, however vaccinated; whilst the risks to patients would be so great that such treatment would be unjustifiable.

The influence that bacteriology has had on medicine and surgery is best appreciated when some special process or condition is followed in its etiology, progress, and termination; in inflammation, for example, the study of bacteriology has revolutionized our conception of the whole subject, and, moreover, has enabled us to bring into harmony theories and interpretations of facts which hitherto have appeared to be diametrically opposed to one another. The various observations as to the changes in the fixed and parenchymatous cells were supposed to put out of court the processes of emigration of leukocytes and changes in the walls of the vessels. A battle royal waged between those who held that there could be no inflammation without vascular phenomena, and those who maintained that these vascular phenomena were merely secondary events, and the difficulty of deciding on this question may be readily imagined when it is borne in mind that in the human subject and the higher animals on which experiments were at first exclusively made it is impossible to set up any definite irritative changes without calling to our aid traumatism or some form of chemical irritation; and also that in such experimental subjects even the tissues which in a normal condition are extra-vascular have, under the slightest irritation, a tendency to return to their embryonic vascularized condition. It was then found that certain bacteria when introduced into the tissue had the power of setting up rapid inflammatory changes; then the pathologist and the zoölogist agreed to ascertain whether changes comparable to those set up in inflammation would be set up either by bacteria or through the irritant products when brought in contact with lower unicellular organisms or with simple organisms in which no bloodvessels are ever developed.

As a result of the various observations made, inflammation is looked upon as only part of a series of changes, all of which work toward a definite end, namely: first, the getting rid of foreign bodies, whether organic or inorganic, whose presence might exert a deleterious influence on the issues in which they are lodged; and secondly, to repairing the breach that has been left at the point at which these foreign bodies have been injected.

The soluble products derived from pure cultures of microörganisms are now known to be composed of a large number of different substances, to isolate which various attempts—many of them unsuccessful—have from time to time been made.

The methods of chemical bacteriology, corroborated by chemical observation, have determined that diphtheria is dependent for its specific symptoms on the diphtheria-bacillus. This bacillus does not attack healthy individuals, but if there is slight ulceration of the throat, or slight fibrinous exudation on the surface of the tonsils, or the posterior surface of the velum palati, diphtheria suddenly makes its appearance. Sometimes the exudation appears to be associated with the local action of the diphtheria-bacillus itself, but usually the diphtheritic process appears to be secondary to small patches of ulceration and exudation. Experiment offers the explanation of this fact. The diphtheria-bacillus does not appear to have the power of attacking healthy mucous membrane; but when it finds a nidus in coagulated fibrin it is able to produce its special secretion or enzyme, part of which acting on the fibrin, just as the enzyme met with in the stomach acts on food, rapidly transforms the insoluble and undialyzable fibrin into soluble albumoses, some of which in turn are utilized for the nutrition of the microörganism, whilst the remainder of the enzyme and the products of its action on the fibrin, absorbed by the lymphatics and bloodvessels, are carried into the system, where they act on the tissues and organs, and, after being broken down into lower molecular combinations in certain organs, are excreted.

BOOKS AND PAMPHLETS RECEIVED.

Conjunctivitis as a Cause of Poor Vision. By W. H. Bates, M.D. Reprint, 1892.

Treatment of Chronic Inflammation of the Mucous Membrane of the Eye, Ear, and Throat. By W. H. Bates, M.D. Reprint, 1892.

Glaucoma: Its Nature and Treatment. By J. H. Woodward, M.D. Reprint, 1892.

Post-febrile Insanity. By Henry M. Hurd, M.D. Reprint, 1892.

The Bacteria in Wounds and Skin-stitches. By Hunter Robb, M.D. Reprint, 1892.

The Use of Morphine and Other Strong Sedatives in Gynecological Practice. By Hunter Robb, M.D. Reprint, 1892.

Some Remarks on Pulmonary Tuberculosis, etc. By Louis F. Criado, M.D. Reprint, 1892.